

**EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME
REGARDING PREVENTION OF OPPORTUNISTIC INFECTIONS
IN TERMS OF KNOWLEDGE AND PRACTICE AMONG
PATIENTS WITH AIDS ADMITTED IN
IRT-PERUNDURAI MEDICAL COLLEGE
HOSPITAL, PERUNDURAI,
ERODE DISTRICT.**

**A DISSERTATION SUBMITTED TO
THE TAMILNADU DR. MGR MEDICAL UNIVERSITY,
CHENNAI IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER
OF SCIENCE IN NURSING**

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Certified Bonafide Project Work

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CHAPTER – I

INTRODUCTION

“Infectious disease will last as long as humanity itself”

I). BACKGROUND OF THE STUDY

Health (or) wellness is not merely absence of illness. Health in its broadest sense is a dynamic state in which the individual adapts to changes in the internal and external environment to maintain a state of wellbeing. WHO define the health as a state of complete physical, mental and social wellbeing and not merely an absence of disease (or) infirmity. Illness is a process in which the functioning of a person is diminished (or) impaired in one (or) more dimensions when compared with the person previous condition.

-Potter and perry (1997)

Approximately 17.6 million people in low- and middle-income countries die each year from communicable diseases and maternal and neonatal conditions. Both the occurrence of and the death rates from such diseases and conditions are far lower in all high-income countries. This is due in part to greater wealth, better general living conditions, and different climatic and environmental factors, but also to the use of cost-

effective health interventions. Many of the diseases that account for the largest differences in health status between low- and middle-income countries and high-income countries are also diseases for which cost-effective strategies are known, available, and feasible.

-WHO (2009)

The Bulletin of the World Health Organization is preparing a theme issue on communicable diseases in the South-East Asia Region and seeks original research papers, systematic reviews, opinion pieces and papers on public health policy and practice. The issue aims to draw international attention to the communicable disease burden and its determinants, the need for research in specific areas, and the multiple policy challenges facing government health officials in that part of the world. The major scourges, such as HIV/AIDS, tuberculosis, malaria, and dengue, as well as all emerging and reemerging zoonoses and the neglected tropical diseases, which disproportionately affect the poor, will be of primary interest. There will also be an emphasis on the environmental factors that affect disease transmission, such as climate change, international travel and the global economy, and on the effects of morbidity and mortality from communicable diseases on the social and economic development of the region.

-WHO (2009)

According to WHO estimates, 340 million new curable sexually transmitted infections occurred in (2000), about half of them in Asia. Asia is also the second-most severely affected continent by the HIV/AIDS pandemic.

- WHO (2008)

Acquired immuno deficiency syndrome (AIDS) (also called “slim disease”) is a fatal illness caused by a retrovirus known as the Human Immuno Deficiency Virus (HIV). HIV belongs to the retrovirus family and affects the body’s immune system leaving the victim vulnerable to a host of life threatening infections, neurological disorders, (or) unusual malignancies which collectively called “opportunistic infections”.

Park, k., (2003)

The virus causing AIDS was first discovered by L. Montagnier of france in 1983 and named as Lymphadenopathy associated virus. Following that R. Gallo of USA, reported several characteristics of this virus and it was accepted as universal nomenclature of the retro – virus, Human Immuno Deficiency Virus (HIV).

Gupta, S., (1993)

The host of HIV Infection is commercial sex workers, In the USA over 51% of cases were in homosexuals(or) bisexual men. In contrast in equatorial Africa. The size of the risk is affected by a number of factors, including the presence of sexually transmitted disease, sex, age and virulence of the organism. AIDS also transmitted by contaminated blood transfusion of whole blood cells, platelets and factor VII and IX derived from the human plasma. Blood is highly infective when introduced in large quantities directly in to the blood stream. Risk of getting infected through a contaminated needle , syringe(or) other skin-piercing instrument very much lower when compare with transfusion, but its a one major cause of AIDS in both developed and developing countries. Risk of transfusion of a unit of infected blood is estimated to be over 95%.

HIV may pass from an infected mother to fetus through the placenta (or) to her infant during delivery (or) feeding form of transmission vary from 20-25%. Other risk groups are Truck drivers, migrant workers.

The most at risk populations globally are the young adults, the age group 20-40 years old. Each person spending about \$400 per year for treatment and care.

-Park,k., (2009)

Clinical disease is uncertain 10-30% develops at earlier stage, another 25-30 % develops AIDS related complex, and 75% develops AIDS at end of the 10 years. But they are more infectious to others in very early stages before antibody production, it is called “window period”. However, there are some people called long term non-progressors who don’t progress to AIDS, despite many year of being affected with HIV. Many of them have genetic abnormality that makes it more difficult for HIV to enter the virus’s chief target white blood cells called T-cell. Because of this virus doesn’t replicate efficiently and cannot easily infect new cells. As a result, the viral load or amount of virus in the person’s blood is very low, but no overt signs of disease except persistent lymphadenopathy. It is not clear how long the state last .It is called asymptomatic carrier stage.

Park,k.,(2009)

AIDS has evolved from a mysterious illness into a global (epidemic), which has infected tens of millions in 25 years. AIDS threatens the very fabric of the society. It affects people in their more productive age resulting in several direct and indirect economic costs. These include increased spending on health care. A drain on health care resources, including hospitals, drug and staff. Loss of production and productivity in all sectors

of the economy including women's labour in and outside the home. Loss of investment in training of skilled labour and educated professionals. Loss of consumers and purchasing power, and loss of tourist revenues. In developing countries, these costs may further affect already troubled and burned economics. Because AIDS incapacitates people at ages when they are most needed for the support of the young and the elderly.

The impact on the families with one (or) more HIV -infected members is enormous, and is aggravated by the frequent stigmatization of people with HIV/AIDS. AIDS will also leave million of the children without parents. These AIDS orphan will swell the ranks of street children, already estimated at over 100 millions, increase the number of young people vulnerable to infected with HIV.

- WHO (1991).

AIDS patients come across all physical problems as weight loss, Dyspnea, Weakness, diarrhea and inability to care themselves. Psychological problems such as stress, depression about physical condition, future and social discrimination.

-Lewis et al., (2008)

HIV individual crushed with some social stigma like, Unemployment, loss of income, rejection, social discrimination, adverse financial repercussion and preexisting prejudice against social stigma.

-Vidhya Bhusan,D., (2004)

In India, as else where, AIDS is often seen as “Some one else problem” - as something that affects people living on the margins of society, whose lifestyles are considered immoral. Even as it moves into the general population, the HIV epidemic is still misunderstood among the Indian public. People living with HIV have faced violent attacks, been rejected by families, spouses and communities, been refused medical treatment and even income reported cares, and denied the last rites before they die.

Mathers CD, Loncar D., (2006) Global HIV/AIDS deaths are projected to rise from 2.8 million in 2002 to 6.5 million in 2030

NEED FOR THE STUDY :

According to **UNAIDS (2008) report** AIDS can be called as a modern pandemic, affecting both industrialized and developing countries. Global AIDS prevalence about 32.8 million. In among 30.8 million were adult and 2 million were children. New infection among children declined

from 4, 60,000 in 2001 to 4, and 20,000 in 2007. Death due to AIDS among children have increased. Prevalence are 2.7 million, were mortality was 2 million.

According to **UNAIDS (2008) report** AIDS epidemic in America is about 4,55,636 (50 states with district of Columbia) around a fifth of all cases, with Los Angels (60,583 cares) and Miami (58,554) also providing substantial numbers. Canada is estimated about 58,000 and 4,500 new infections occur each year.

According to **UNAIDS (2009) report** estimated number of people living with HIV/AIDS in Latin America is about 17,00,000 and newly infected during 2007 is about 1,40,000, and in united kingdom is about 1,05,625 mortality was about 18,787.

According to **UNAIDS (2008) report Sub** Saharan Africa continues to be the region most affected by the AIDS pandemic. Number of cases in sub-Saharan Africa is about 22 million. In among 68% adult, 90% of children and 61% of women live in this region. Same year 1.5 million were died and 11.6 million children become orphaned.

According to **UNAIDS (2008) report** estimated number of AIDS cases in Australia is about 17,444 and 6765 death were reported.

According to **UNAIDS (2008) report** estimated number of people living with HIV /AIDS in Europe is about 2.2 million and 2,77,970 has reported in western Europe, 22,792 new cases reported in eastern Europe.

South East Asian region is the second most affected region in the world estimated about 2, 60,000 new infection and 3, 00,000 HIV associated death reported. Adult population with HIV is 0.35%. Pattern of distribution is Bangladesh <0.1%, Bhutan <0.1 %, India 0.3%, Indonesia 0.2% , Maldives <0.1% , Thailand 1.4%. Number of people living with HIV/AIDS in Thailand is about 6, 10,000, were in Myanmar 2, 40,000, in Cambodia 75,000, and in China 7,00,000.

Estimated number of cases in India reported about 2.4 million. Approximately (1.8-3.2 million) people live with AIDS, prevalence being 0.34% among them 39% was females and 3.5% were children. Four south Indian states contribute 60% of AIDS.

Distribution of reported AIDS by states up to (2007) were in Delhi (2.2%), Madhya Pradesh (1.38%), West Bengal (1.97%), Nagaland (0.58%),

Mumbai (8.28%), Maharashtra (11.46%), Gujarat (5.49%), Andrapradesh (12%), Karnataka (3.47%), and Tamilnadu (41.63%).

Park ,k.,(2009)

HIV prevalence among different population group in India (2007) were Antenatal women (ANC) 0.48%, Sexually transmitted disease (STD) 3.61%, Injected drug users 7.23%, Men have sex with men (MSM) 7.41%, Female sex with worker 5.06%, Migrants 3.61% and truckers 2.51%.

Park, k., (2009)

According to **TANSAC (2009)** Age wise distribution of AIDS cases in India (2007) were 0-14 yrs (8890), 15-29 yrs(56,615) 30-49 yrs,(1,04,087) and > 47 years (12,193).

TANSAC (2009) has conducted a project and reported that the number of people living with HIV/AIDS in Tamilnadu is currently estimated about 1,84 lakhs. Approximately greater than 5%. Pattern of HIV epidemic in Tamilnadu were Antenatal mother (ANC) – 0.25%, Female sex workers 4.68%, Injectable drug users (IDU) 16.8%, MSM 6.6%, sexually transmitted diseases 8.0%. HIV prevalence among High risk groups in Tamilnadu such as STD (8%), MSM (6.6%), CSW (3.6%).

According to **TANSACS (2007)** As of December (2008) there are 2,17,970 people estimated to be HIV (Positive) in Tamilnadu. It is estimated that the prevalence in various districts of tamilnadu were 1.5-2.25% in Salem, 1.0-1.5% in Nammkkal, 0.5-1.0% in Krishnagiri, 0-0.5 in Theni. Approximate number of people affected in Erode district about 2000, in Tirupur district about 2500.

Opportunistic infection will increase the burden of health system and country. Tuberculosis is the most common infection among HIV infected individual and is the leading cause of death in people living with HIV/AIDS. According to global situation analysis global HIV associated TB prevalent is about 7 million, mortality due to TB is 1.7 million. 7 million of TB/HIV patient distributed as 28% in south Africa, 6% in Nigeria, 4% Mozambique, 5% in Malawi, 10% in Kenya, 3% in Ethiopia 1 % in Europe, 1% in Russia, 2% in southeast region, 3% in India.

According to **NACO, (2000),(2003)** in India 62% of the cases were reported in the year of 2000, and 80% were reported in the year of 2003. 10% of HIV patients with 15% chance of TB/year.

In India candidiasis accounts 5% for AIDS patients with 3 episodes /year. 57% cases were reported in the year of 2000, 88% were reported in the year of 2003. Cryptococcal and cryptosporidiosis accounts 5% AIDS patients with one episode /year. 35% cases were reported in 2000, and 50% in 2003. pneumocystis jeuveri pneumonia accounts 5% for AIDS patients with one episode/year. 3% were reported in 2000, and 32% were in 2003. A parasitic infection accounts 10% for AIDS patients with one episodes /year. In among toxoplasmosis accounts 2%for AIDS patients one episodes /year.Isospridiasis accounts for 3 episodes/ year,3% were reported in 2000,and 5.6% reported in 2003. kaposi sarcoma and oral hairy leukoplakia reported 8% in 2000, 12% in 2003. Viral infections such as herpes simplex accounts 2% for AIDS patients with 1 episode/ year, varicella zoster accounts 5% with 1 episode / year, Human herpes virus 1% with 1 episode/ year.

Park ,K.,(2009)

WHO launched a "Global programme on AIDS " on February 1987 to provide global leadership and to support the development of national AIDS programme .United state agency for international development(USAID) has been assisting in number of projects ,counseling

, health education and control of communicable and sexually transmitted diseases.

National AIDS control programme was launched in India in the year of 1987. The ministry of health and family welfare has set up National AIDS Control Organization (NACO) as a separate wing to implement and closely monitor the various component of the programme. The aim of the programme is to prevent further transmission of HIV to decrease morbidity and mortality association with HIV infection, and to minimize the socio economic impact result from HIV infection.

In April 2002 government approved national AIDS control policy with the objective of blood safety, counseling and testing of HIV, control the sexually transmitted disease, HIV senital surveillance, school education, behavior surveillance , information education and communication on HIV / AIDS and Antiretroviral treatment.

Park ,K.,(2009)

TANSACS (Tamilnadu state AIDS control society) has started at January 1993 an organized stake holder meet with the agencies involved in the implementation of care and support programme in the state. It

provides 35 ART centres, 43 community care centre, 90 links ART centre in Tamilnadu.

Park ,K.,(2009)

APAC (AIDS prevention and control) off spring voluntary health service (VHS) stated 1995, with the prime objective of preventing and controlling the spread of HIV / ADIS through sexual mode.

Government of India has launched a toll free national AIDS telephone helpline has been setup to provide access to information and counseling, on HIV/AIDS related issues. This is a computerized 4 digit number 1097, with a voice response system linked with a telephone helpline

Park ,K.,(2009)

During clinical posting the Investigator found that AIDS patients are frequently hospitalized due to opportunistic illness and they were suffering with lots of problem such as difficult to breath, inability to chew and swallow food and water etc., and confined to the bed itself, which motivated the researcher to study on it and to help them to extend the days of survival.

STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of structured teaching programme on prevention of opportunistic infections in terms of knowledge and practice among patients with AIDS admitted at Perundurai Medical College Hospital , Perundurai.

OBJECTIVES

1. To assess the pretest knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.
2. To assess the post test knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.
3. To compare the pretest and post test knowledge scores regarding prevention of opportunistic infections among patients with AIDS.
4. To compare the pretest and post test practice scores regarding prevention of opportunistic infections among patients with AIDS.
5. To correlate the post test Knowledge and post test practice scores regarding prevention of opportunistic infections among patients with AIDS.
6. Find out the association between post test knowledge scores on prevention of opportunistic infections among patients with AIDS with their selected demographic variables.

7. Find out the association between post test practice scores on prevention of opportunistic infections among patients with AIDS with their selected demographic variables.

OPERATIONAL DEFINITION

Effectiveness:-

Producing an intended result. In this study it refers to determine the extent to which structured teaching programme has brought about the significant difference between pre and post test knowledge and practice scores which is measured in terms of statistical measurement.

Structured Teaching Programme :-

It is a planned, orderly framed content (or) information to educate an individual (or) group purposefully.

In this study it refers to systematically developed instruction and teaching designed to provide information regarding prevention of opportunistic infections like Dietary measures, personal hygienic measures, Exercise and physical activity, Sleep and rest, medication, follow up and general preventive measures by using compact disc for 40 minutes to create awareness on preventing opportunistic infections and produce marked changes in their practice.

Knowledge :-

Knowledge is information (or) level of understanding gained through experience (or) education.

In this study it refers to the verbal response of the patient and their level of understanding of the AIDS patient about prevention of opportunistic infections among patients with AIDS which is measured through structured interview schedule with knowledge questionnaire and its scores.

Practice:-

Performance or skill gained through experience (or) education. In this study it refers to practice in terms of verbal response of patients with AIDS regarding prevention of opportunistic infections which is measured by a structured interview schedule and its scores.

Patient:-

A person who is ill (or) is undergoing treatment for a health care problem. In this study it refers to person diagnosed to have AIDS and undergoing treatment.

AIDS:-

Acquired immunodeficiency syndrome (AIDS) is defined as the most severe form of a continuum of illness associated with Human immuno deficiency virus (HIV) infection.

- **Brunner,G., (2001)**

In this study it refers to the person diagnosed as AIDS between the age group of 20-50 yrs, admitted in the ward for minimum of 7days and undergoing treatment in the hospital.

Opportunistic infections;-

An infection caused by various organisms such as fungi, and bacteria, that occur in immuno compromised patients. -**Brunner(2001)**

In this study it refers to patients develop either one of the following infections like Tuberculosis, oral thrush, pneumocystis carini pneumonia, Kaposi's sarcoma, meningitis, Toxoplasmosis encephalitis.

HYPOTHESES:

H₁ : The mean post test knowledge scores is significantly higher than the mean pretest knowledge scores on prevention of opportunistic infections among patients with AIDS.

- H₂ : The mean post test practice scores is significantly higher than the mean pretest practice scores on prevention of opportunistic infection among patients with AIDS.
- H₃ : There will be significant correlation between posttest knowledge scores and posttest practice scores on patients with AIDS.
- H₄ : There will be significant association between post test knowledge scores on patients with AIDS with their selected demographic variables.
- H₅ : There will be significant association between posttest practice scores on patients with AIDS with their selected demographic variables.

ASSUMPTION

1. AIDS patients may not have adequate knowledge regarding prevention of opportunistic infection.
2. Knowledge influences the practice regarding prevention of opportunistic infections.

3. Structured teaching programme enhances the knowledge of patients with AIDS regarding prevention of opportunistic infections.
4. Nurses have an important role in educating the patient on prevention of opportunistic infections.

DELIMITATION

The data collection period is limited to 5 weeks.

Sample size for the study is limited to 50.

PROJECTED OUTCOME

Structured teaching programme will help the patients to gain knowledge regarding prevention of opportunistic infections which will help them to prevent from developing opportunistic infections and prolong their life span.

II -CONCEPTUAL FRAMEWORK

Conceptual framework helps to express abstract ideas in a more reality understandable or precise form than the original conceptualization. This conceptual framework for this study was directed from Wiedenbach's helping art of clinical nursing theory (1969).

According to Ernestine Wiedenbach (1969), nursing is nurturing and caring for someone in a motherly fashion. Nursing is a helping service. That is rendered fashion with compassion, skill and understanding to those in need of care, counsel and confidence in the area of health. Conceptual used for this study based on the concept of helping the patient with AIDS to improve skills to cope with their disease condition and also to gain knowledge and develop desirable skill towards prevention of opportunistic infection. According to this theory nursing practice consists of three aspects which includes.

- Step I : Identification of the need for help.
- Step II : Ministration of the needed help.
- Step III : Validation of the need for help was met.

Central purpose:

According to the theorist the central purpose of the nurses' action is to define the quality of health desires to affect or sustain patients specifies what recognition the central purpose as essential to the particular discipline.

In this study the central purposes is the patients with AIDS to gain knowledge and practice towards prevention of opportunistic infection.

STEP I- IDENTIFICATION OF THE NEED FOR HELP:

Wieden Bach's believed that every individual need as a normal part of living in comfortably or capably on situation. Identification involves individualization of the patient, his experience and recognition of the patient's perception.

In this study idea of patient needs including general information which comprises the age, sex, marital status, educational status, occupation, area of residence and duration illness of opportunistic

infection. Pre assessment of knowledge, and practice regarding prevention of opportunistic infection.

STEP II- MINISTRATION OF THE NEEDED HELP:

Ministering is providing the needed help. It requires the identification of the need for help. The selection of a helping measures appropriate to that need and the acceptability of the help to the patient.

According to the theorist Ministration of the needed help has two components.

(a). Prescription

(b). Realities

(a).Prescription:

According to the theorist a prescription is directive to directive to activity which is specifies both the nature of the action that will most likely lead to fulfillment of the nurses' central purpose and the thinking process that determines it.

In this study prescription is plan of care to achieve the purpose which includes development, and validation of structured teaching programme.

(b). Realities:

According to the theorist, the realities of the situation in which the nurse is to provide nursing care. Realities consists of all factors- physical, physiological, psychological, emotional and spiritual that are at play in a situation in which nursing actions occur at any given moment. Realities are the immediate solution that influence the fulfillment of the central purpose nurses should consider the realities of the situation in which investigator is to providing care. Wiedenbach defines five realities as: the agent, the recipient, the goal, the means and the framework.

(i)Agent:

According to the theorist the agent who is professional nurse or her delegate characterized by the personal attribute capacities, capabilities and most importantly commitment and competencies in nursing. In this study the investigator is the agent.

(ii)Recipient:

According to the theorist the recipient mean the patient who is characterized by the personal attributes problem, capabilities and ability to

cope with the concerns or problems being experienced. In this study patients with AIDS are the recipient.

(iii)Goal:

According to the theorist the goal is the desired outcome the nurse wishes to achieve. In this study it refers to the AIDS patients to gain knowledge and improve their practice regarding prevention of opportunistic infections.

(iv)Means:

According to the theorist, the means comprise the activities and devices through which the practitioner is enabled to attain goal. The means includes skill, techniques, procedure and devices that may be used to facilitate nursing practice. In this study it refers to implementation of structured teaching programme regarding prevention of opportunistic infections like Dietary measures, personal hygienic measures, Exercise and physical activity, Sleep and rest, Medication, General preventive measures and follow up among patient with AIDS by using compact disc and Television for 40 minutes.

(v)Framework:

According to the theorist, the framework is composed of all the extraneous factors and facilities in the situation that affect the nurses'

ability to obtain the desired result. In this study it refers to the hospital setup AIDS ward in Perundurai Medical College and Hospital, Perundurai.

STEP III- VALIDATION OF THE NEED FOR HELP WAS MET:

According to the theorist after the help has been ministered, the nurse validates that the actions were indeed helpful. Evidence must come from the patient that the purpose of the nursing action has fulfilled.

In this study the validated need for help was met by means of posttest assessment of knowledge, and practice regarding prevention of opportunistic infection among patients with AIDS after structured teaching programme. Positive outcome in AIDS patients who had adequate knowledge and practice. Negative out come on prevention of opportunistic infection patients who had inadequate knowledge, and practice who need the ministering of needed help again.

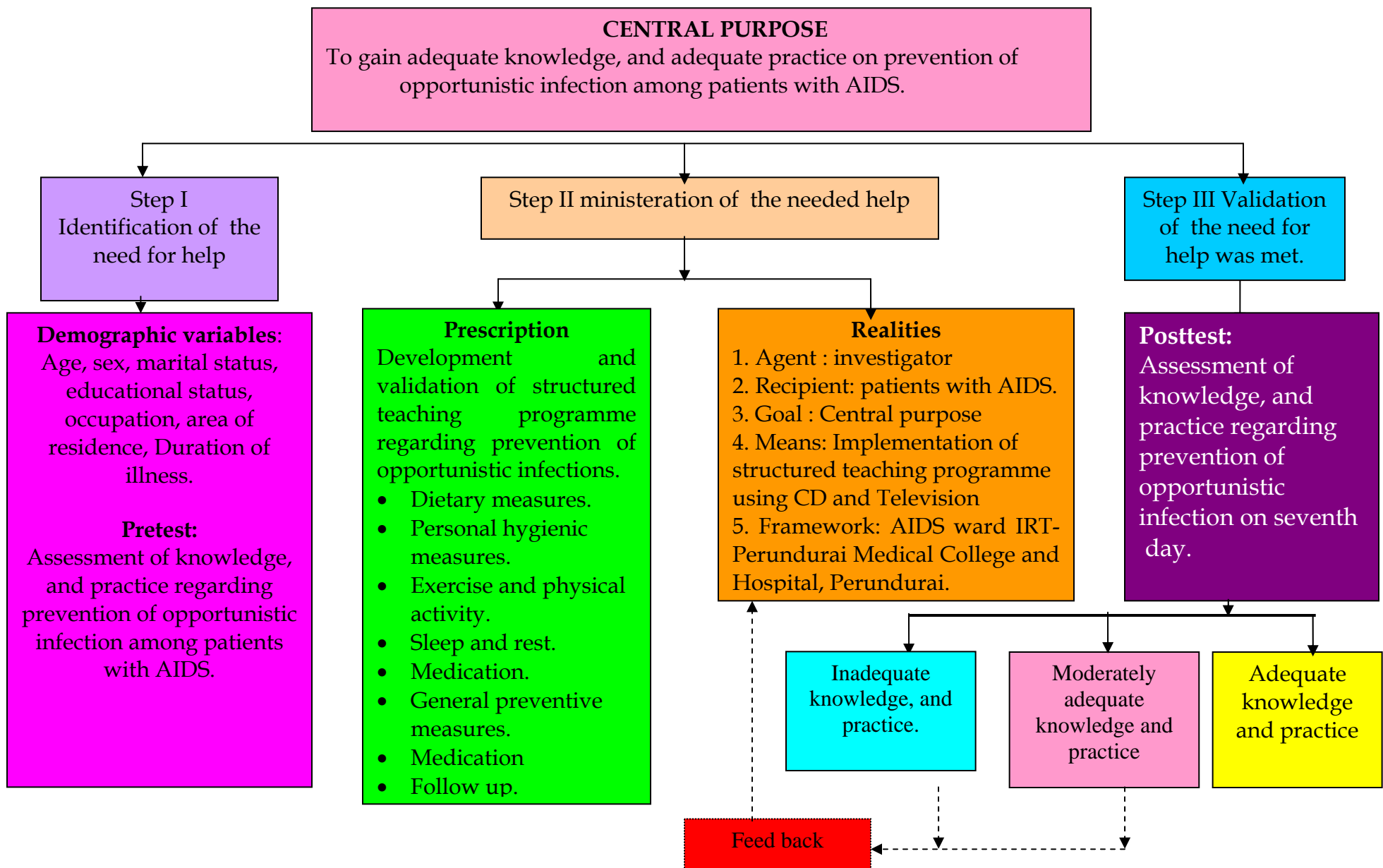


FIG.I. MODIFIED WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY-1969

CHAPTER – II

REVIEW OF LITERATURE

An extensive review of literature done by the investigator to lay broad foundations for the study. The review of literature in this study is organized under the following headings.

PART-I

- a. Overview of AIDS

PART-II

- a. Studies related to risk factors of AIDS.
- b. Studies related to opportunistic infections.
- c. Studies related to prevention of opportunistic prevention.
- d. Studies related to structured teaching programme.

PART- I

a. OVERVIEW OF ACQUIRED IMMUNO DEFICIENCY SYNDROME

DEFINITION:

It defined as the infection caused by Human immuno deficiency Virus. Due to the Human immuno deficiency Virus the person develops most severe form of continuum of illnesses and is called AIDS” Acquired immuno deficiency Virus.

Lewis, et al., (2009)

HISTORY :-

HIV infection is an epidemic in united states and Canada present for a number of years from 1981. By 1985 the causative agent HIV was identified and AIDS was determined. Then the antibody test was developed. Drug therapy to treat HIV infection was available in 1987 with release of Zidovudine . Since 1994 several advances have been made, including development of laboratory test. Production of new drugs, combination therapy.

INCIDENCE:

By the end of 2001., 8,10,000 case of diagnosed and over 4,67,000 AIDS, related deaths have been reported in united states 45,000 new cases every year and women and adolescents are being infected at higher rates.

Globally HIV is more devastating 42 million people, including 3-2 million children, are living with HIV. Sub Saharan Africa, Asia, Russia, South America are epidemics. In developing countries, major mode is heterosexual sex women and children are burdened.

Black .M.Joyce., (2001)

TRANSMISSION OF HIV

SEXUAL INTERCOURSE

Sexual contacts with an HIV - infected partner is the most common mode of transmission. Sexual activity provides an opportunity for contact with semen, vaginal secretions, or blood all of which have lymphocytes that contain HIV.

Although men who have sex with men accounts for HIV infection, Heterosexual transmission more prevalent on infection among women. Unprotected sex of any form may have greater risk for infection. Sexual activities that involve blood, such as during menstruation or as result of trauma to tissues. Presence of genital lesions caused by other sexually transmitted diseases, syphilis.

CONTACT WITH BLOOD AND BLOOD PRODUCTS

HIV transmission occurs by exposure to contaminated blood through the accidental or intended sharing or injection equipment, unscreened blood used for transfusion and with risk of infection after a needle stick exposure.

The higher chance of infection is caused by blood from a patient with a high viral load, deep puncture wound, hollow bore needle with visible blood. Splash exposure of blood on skin with open lesions is also a risk.

PERINATAL TRANSMISSION:

Perinatal transmission is the common route of infection for children. Transmission occurs through the placenta from mother to fetus during pregnancy, at the time of delivery (or) after birth through breast feeding.

Brunner ,G., (2005)

CLINICAL MANIFESTATIONS

ACUTE INFECTION

Sero conversion is frequently accompanied by flu like symptoms, such as Fever, swollen glands, sore throat, headache, malaise, nausea, muscle and joint pain, diarrhea and diffuse rash.

Acute retroviral syndrome generally occurs 1-3 weeks after initial infection.

CHRONIC INFECTION

Early chronic infection

The median interval between untreated HIV infection and diagnosis is 10 years. Cd4+ t lymphocytes count remain above 500cells/ μ l and viral load in the blood is low.

Intermediate chronic infection

When the Cd4+ t lymphocytes count drops to 200-500 cells/ μ l advances to active stage and early symptoms become worsen.

Late chronic infection

When the Cd4+ t lymphocytes count drops below 200cells/ μ l development of one of the opportunistic infections such as fungal, viral, protozoa, bacterial, opportunistic cancer, wasting syndrome dementia etc takes place.

DIAGNOSTIC STUDIES

Enzyme linked immunosorbent assay

Is done to detect serum antibodies that bind to HIV antigens.

Western blot

It is the conformity test that, serum antibodies can be detected.

Immuno florescent assay

Is used to identify HIV infected cells. If all three results are positive it is reported.

MANAGEMENT

Drug therapy

There are 3 groups of drugs

- Non nucleoside reverse transcriptase inhibitors
- Protease inhibitors
- Fusion inhibitors

Lewis,et al.,(2009)

PART-II

a. STUDIES RELATED TO RISK FACTORS OF AIDS

Mwangome,M. et al.,(2008) conducted a study on HIV incidence in Men having sex with men sex workers (MSM - SW) in coastal Kenya. MSM - SW, Female sex workers (FSW), and strictly heterosexual men had multiple partners and denied sex work were enrolled in an open cohort which include a total of 277 MSM - SW, 226 FSW, and 85 heterosexual males. Overall HIV incidence was 5.7 per 100 person observation. 8.6 for MSW - SW, 3.2 for FSW and 3.6 for heterosexual males.

Coffee,M and Lurie, MN. (2007) conducted a study to use observed data to estimates the impact of migration on the spread of HIV in South Africa. It consists of 488 adults, which included male migrants, male non-migrants and their rural partners in KwaZulu/Natal, South Africa. HIV prevalence would increase 10 times among migrants' female partners (1.8 to 19%). In contrast, if migration were to occur infrequently, with migration-associated risk behavior assumed to be at current levels, the predicted epidemic would be one fifth that currently observed (2.8 versus 15.1%).Migration primarily influences HIV spread by increasing high-risk sexual behavior, rather than by connecting areas of low and high risk. Frequent return of migrants is an important risk factor when coupled with increased sexual risk behavior. Accordingly, intervention programmes in South Africa need to target the sexual behaviour of short-term migrants specifically.

Wood ,E et al., (2009) conducted a study to examine the relation between plasma HIV- RNA concentrations in the community and HIV incidence among injecting drug users Prospective cohort study includes Injecting drug users, with and without HIV, followed up every six months between 1 May 1996 and 30 June 2007. Results shows among 622 injecting

drug users with HIV, 12 435 measurements of plasma HIV- RNA were obtained. Among 1429 injecting drug users without HIV, there were 155 HIV sero conversions. Concluded that a longitudinal measure of community plasma HIV-RNA concentration was correlated with the community HIV incidence rate and predicted HIV incidence independent of unsafe sexual behaviors and sharing used syringes.

Kumarasamy ,L et al.,(2009) studied to assess the risk factors associated with heterosexual HIV transmission among South Indian. A nested matched case-control study of serodiscordant couples in which the HIV-infected partner (index case) was enrolled in care. Demographic and clinical characteristics, sexual behaviours, CD4 cell count and plasma HIV-RNA loads were measured at enrolment and longitudinally over 12 months of follow-up. The study included 70 cases who were seroconverted during study follow-up and 167 matched controls who remained persistently serodiscordant. The incidence of HIV infection among the initially seronegative partners was 6.52 per 100 person-years. Couples-based intervention models are crucial in preventing HIV transmission to seronegative spouses. Providing early treatment for sexually transmitted

infections and enhancing condom use and disclosure could potentially decrease the risk of HIV transmission with in Indian married couples.

Syeu,y. (2000) stated Acquired immune deficiency syndrome (AIDS) is a modern plague. The first sign of the disease was the appearance of *Pneumocystis carinii* and Kaposi's sarcoma among young homosexual patients. The virus transmission is from an infected individual to a susceptible host through blood-related, sexual, and perinatal routes. Exchange of body fluid occurs when sharing syringes, drugs, and drug paraphernalia.

Fawzi, Z. (2000) Studied on recent outbreaks of injecting drug use and HIV-1 in Burma, India, China, and Vietnam have been associated with Burmese and Laotian overland heroin trafficking routes. We analyzed findings from narcotics investigations, molecular epidemiology studies of HIV, and epidemiologic and behavioral studies of injecting drug use, to evaluate the roles that the heroin export routes play in the spread of drug use and HIV in south and south-east Asia. We reviewed the medical and narcotics literature, the molecular epidemiology of HIV, and did key informant interviews in India, China, and Burma with injecting drug users, drug traffickers, public health staff, and narcotics control personnel. Result shows Four recent outbreaks of HIV among injecting drug users appear linked to trafficking routes. Route 1: From Burma's eastern border to China's Yunnan Province, with initial spread of HIV-

subtype B, and later C. Route 2: Eastern Burma to Yunnan, going north and west, to Xinjiang Province, with B, C, and a B/C recombinant subtype. Route 3: Burma and Laos, through northern Vietnam, to China's Guangxi Province, subtype E. Route 4: Western Burma, across the Burma-India border to Manipur, predominant subtype C, and B and E.: Overland heroin export routes have been associated with dual epidemics of injecting drug use and HIV infection in three Asian countries and along four routes.

b. STUDIES RELATED TO OPPORTUNISTIC INFECTIONS

Davis, J.L et al., (2007) conducted a study on pneumocystis colonization among hospitalized HIV infected patient with non-pneumocystis pneumonia. Performed a cross sectional study of the prevalence and clinical predictors of pneumocystis. Colonization in 172 HIV infected, PCP negative inpatients undergoing evaluation of 183 episodes of pneumonia at either the medical center of Louisiana at New Orleans 68% (117/172) of all patients were colonized with pneumocystis. No strong association with colonization were identified for any demographic factors, having a CD₄⁺ T cell count < 50 cell and using PCP prophylaxis were associated with pneumocystis colonization. After adjustment for CD₄⁺ T cell count, use of PCP prophylaxis was associated with decreased odds of colonization. 11 patients who are colonized were

subsequently re admitted for evaluation. Thus majority of hospitalized HIV infected patient with non - PCP pneumonia are colonized with pneumocystis. Pneumocystis colonization among hospitalized patient does not commonly lead to PCP.

Murray, F.John. (2003) stated that pulmonary disease is a major source of morbidity and mortality in HIV infected person. Pneumocystis Carinii pneumonia has decreased substantially during the last eight years but remain common disorder that announces the onset of AIDS. Tuberculosis is by far the most important AIDS - associated Indicator disease in developing countries.

Peruzzi, W.T et al., (1990) studied on concurrent bacterial lung infections in Incubated and non - incubated patients with AIDS. Retrospective review of medical records done to 29 AIDS patients were eight (28%) were survivors and 21 (72%) were non survivors. Thus there was no significant difference in duration of incubation (or) duration of ICU stay between survivors and non survivors with (or) without incubation. The incidence of bacterial concurrent lung infection (CLI) in AIDS patient was 7% and incubated patients was 10%.

Shailaja, V V.and Pai, LA et al., (2004) conducted a study to document the prevalence of HIV associated respiratory infection in Hyderabad. Study included specimens from 130 patients with complaints suggestive of lower respiratory tract infection. Among them 100 were HIV reactive and 30 were HIV non reactive. Both the expectorated as well as induced sputum samples were collected and processed to examine for the bacterial and fungal pathogen including pneumocystis carinii. Results indicate samples from 63% of HIV reactive and 33.3% of HIV non- reactive patients were culture positive. In all there were 70 pathogens isolated from the HIV reactive subjects, 44.3% were bacteria, 42.9% were mycobacterium and 12.8% were fungi. Lower respiratory tract infection is a common problem among HIV reactive patients and majorities are bacterial infections. Poly microbial isolation observed only among HIV reactive patients. PCP was not documented in series.

Marone, P. et al., (1989) conducted a study to determine the incidence and type of severe bacterial infections in AIDS patients. One hundred and forty three patients were analyzed retrospectively with respect to age, sex risk factors and microbiologically proven severe bacterial infections. Results show that 54 episodes of severe bacterial infections were identified in 44 patients (30.7%).Among 36 men and 8

women the HIV risk groups are 27 Intravenous Drug Addicts (IVDA), 11 Homosexuals, 2 IVDA – Homosexuals, 2 Heterosexuals, 1 Bisexual and 1 child of HIV infected woman. The incidence of severe bacterial infections is about 30% appropriate and prompt antibiotic therapy is usually effective.

Eccles, E. and Ptak,J. (1995) conducted a study on mycobacterium avium complex infection in AIDS. It causes a series of disseminated bacterial infection in up to 40% patients with advanced HIV infection, negative impact on quality of life and contributes significantly to morbidity and mortality. Nurses play an important role in evaluating symptoms and educating patients about the prevention and treatment.

Lourenco, MH. (1991) conducted a study on viral infections in AIDS and in immuno Competent patients suffering from non- Hodgkin's lymphoma (NHL),182 patients were investigated for viral infections. Results indicates that positivity to HIV 1 was found in 1 patient, to HIV 2 in 4; to HTLY 1 in 2, to HSV 1 in 156, to HSV 2 in 24, to CMV in 151, to HBs Ag in 58, to HBs Ab in 25 and to HBc Ab in 45. Immuno competent patient had a minor prevalence of viral infections, namely HBs Ag (31%), HBs Ab (13%), CMV (80%) and HSV – 1 (83%). AIDS patients have more

susceptibility to viral infections and this feature is associated with poor remission rates and short survival.

Ana Luiza werneck and Silva. et al., (2009) conducted a study prospectively compare the prevalence of gastro intestinal opportunistic infections in dyspeptic versus non dyspeptic HIV infected patients with advanced Immuno deficiency. Six hundred and ninety HIV infected patients under high Anti retroviral therapy underwent esophago gastroduodenotomy with mucosal biopsies from the stomach and duodenum. Group 1 had 500 patients mean CD₄ count 154.3 cells/mm³ with dyspeptic syndrome, Group 2: 190 patients mean CD₄ count 171.6 Cells/mm³ with no dyspeptic symptoms. Results indicate gastro intestinal opportunistic Infection were observed in Eight (1.6%) and non-opportunistic parasites in 2 (0.4%) patients. Gastrointestinal opportunistic infection were shown in a small number of HIV infected patients under highly active anti retroviral therapy with advanced immuno deficiency.

Giovana Feitosa. et al.,(2002) conducted a study to determine the potential impact of the presence of intestinal parasitic infections on HIV disease progression; a retrospective study approach was used. The medical charts of 365 HIV infected patients who had been treated at the AIDS clinic

of the Federal university of Bahia hospital were reviewed and the prevalence of parasites was compared with 5,243 HIV negative patients who had attended the hospital during the same period of time. Among HIV infected subjects, CD₄ count, RNA plasma viral load and number of eosinophils were compared according to their stool examination results.

The overall prevalence of each parasite was similar for the HIV positive and HIV negative patients. However the prevalence of *S. Stercoralis* ($P < 10^{-7}$) and *G. Lamblia* ($P = 0.005$) was greater for HIV infected subjects. Concluded that Strongyloidiasis and giardiasis are more frequent in HIV infected patients in Bahia, Brazil. If this association is due to immune dysregulation, as has been proposed elsewhere, it must occur in patients after only minor shift in CD₄ count from normal levels, (or) as a result of immune dysfunction not represented by CD₄ count. These infections do not appear to alter the progression of HIV disease.

Simerman, S. et al., (2000) conducted a study to evaluate the prevalence of intestinal parasite infection and to investigate the possible associations of clinical status and laboratory findings with the different parasites found in stool samples. Each patient was provided with one standard fecal collection vial containing 10% formalin for detecting Ova,

larvae, and cyst. Results indicate a total of 200 patients with acquired immunodeficiency syndrome participated in this study. 40% were infected with at least one pathogenic species. The total prevalence of parasites were 16% for *Giardia lamblia*, 13% for *Entamoeba coli*, 7% for *cryptosporidium parvum*, 3.5% for *Endolimaxnana*, 2.5% for *Ascaris lombricoides*, 2.5% for *stronguloides stercoralis*, 2% for *isospora belli*, and 0.5% for *Blastocystis hominis*.

Results showed that diarrhea was significantly associated with Cryptosporidiosis, giardiasis and isosporosis.

Prasad, KN.et al.,(2000) studied about enteric pathogens associated with chronic diarrhea in HIV positive patients. Stool specimen from all diarrhea patients (n=26) were examined microscopically for ova and parasites using wet preparations and stained smear. Of the 59 patients, 26 (44%) had prolonged diarrhea for more than 4 weeks. Enteric pathogens were detected in 19 (73%) of the 26 patients. 17 patients harbored a single pathogen and two patients had mixed pathogen. The detection rate of emerging parasites, including *Isospora*, *Cryptosporodium*, *Blastocystis hominis* and *strongyloides stercoralis* as a single agent, was significantly, higher than conventional pathogen ($P < 0.05$) only one patient harbored

both conventional and emerging pathogen. *Isospora belli* was detected in 8 (31%) of the 26 diarrhoea patients; in 7 (27%) patient as a single agent and in are patients with *S.Stercoralis*, *Cryptosporidium* was identified in 3 (11%) diarrhoea patients in 2 (8%) patients as a single agent and in one patient with *E. Histolytica*, followed by *B. Hominis* in 2 (8%) patients, *E.Histolytica* was most commonly isolated (11.5%) followed by *Giardia lamblia* enteropathogenic *Escherichia coli* and *campylobacter jejuni*. Parasitic pathogens were frequently associated with HIV positive patients with diarrhea in Northern India. *I.Belli* was the most frequent parasite isolated, followed by *Cryptosporidium*. Stools of all HIV patients with diarrhea should thoroughly be investigated to identify etiologic agents for proper management.

Greenspan, JS. et al., (1990) conducted a study to determine prevalence in gay men examined during scheduled coherent study visits 564 seropositive gay men were examined (blind to serostatus) in 1987 in 3 Cohorts of the oral AIDS epidemiology project the SF gay men Health study (n = 715) the SF city clinic cohort (n = 305) and the SF epidemiology study (n=185) Candidiasis was confirmed by smears. The proportion of Oral candidiasis with erythematous mucosal involvement alone in the cohorts was compared to oral candidiasis patient in the Oral AIDS clinic.

Results indicates Candidiasis was classified in the Cohort as Pseudomembranous (n=15), erythematous (n=2), angular cheilitis (n=6) and type not specified (n=21) which was usually Pseudomembranous. Pseudomembranous Candidiasis is probably readily recognized by trained non dental observers and is infrequently observed in seronegative gay men. Despite training in the oral AIDS clinic, however it appears that erythematous candidiasis is often not detected since it is seen as the whole type of candidiasis in a smaller proportion than in the clinic.

Gennaro, S. et al., (2008) conducted study about prevention of opportunistic infection among AIDS. Oral lesions are common in women and children with HIV/AIDS and may decrease the overall quality of life in these patients because of pain, dry mouth, and difficulty in eating. An oral cavity screening is an easy, non invasive, quick and inexpensive procedure that provides nurses with invaluable information about the need for referral, treatment and health education. Nurses can use the information obtained from a careful oral screening to decrease the symptoms increased with oral lesions and optimize a patient's ability to chew and enjoy food.

Heitman,BB.and Irizzary,AF. et al.,(1997) conducted a study on recognition and management of Toxoplasmosis. Toxoplasmosis is a frequent cause of subclinical latent human infection and is important opportunistic pathogen that may cause several diseases in immuno compromised patients. Patients with AIDS who have anti bodies to T.gondi should be considered at high risk for development of clinical diseases. Reactivation of latent infection in the central nervous system is a common HIV/AIDS related complication in these patients. Routine serologic test cannot distinguish active from latent infection. Neuro radiologic studies may be highly suggestive of toxoplasmic encephalitis, but the definitive diagnosis can be made only by demonstration of toxoplasmosis in brain tissue. The unique pathogenesis of toxoplasmosis encephalitis in patients with AIDS necessitates intensive primary therapy followed by life long suppressive therapy.

Williams, AB.et al., (1998) conducted a study to better understand factors associated with symptomatic and asymptomatic vulvovaginal candidiasis, including the role of immune compromise and patient self – report, a cross sectional analysis of factors associated with the isolation of yeast from vaginal swabs and clinical diagnosis of candida Vaginitis (CV)

among 184 HIV infected women was conducted. 64 (35%) of the women had vaginal swabs positive for yeast. Nineteen (10%) women met the case definition for CV. In a logistic regression model, only $CD_4 \leq 100$ cells/mm³ was predictive of CV ($P = 0.05$). The predictive value of patients self report of CV was only 12%. This study demonstrates that all HIV infected women should receive a regular and thorough gynecological evaluation, regardless of self reported symptoms, HIV infected women will benefit from education about prevention and treatment of CV and women those CD_4 counts are low may wish to consider prophylaxis for CV.

Voltz.et al.,(1999) conducted a study to determine the prevalence of the human papilloma virus (HPV) in HIV infected men, using clinical examination and molecular hybridization in Situ studied the prevalence, clinical and histological characteristics, the types and the evolution of the HPV lesion among the 121 HIV infected men. 16% of the patients are HPV infected genital warts in 37 person and anogenital warts in 26 persons.

The high prevalence of condyloma and dysplasia emphasizes the importance of the anogenital exam in HIV positive patient. In case of anal lesions, anoscopy and biopsy are required. We insist on the need to closely

follow these patients with HPV lesions in order to adapt treatment. Anal cytology and HPV DNA detection by Hybrid capture. Assay should be developed for screening and prevention of the malignant transformation of HPV lesion in the population.

Connor, MD.et al.,(2004) conducted a study on cerebral infarction in adult, AIDS patient from 183 autopsy cases, 26 without evidence of opportunistic cerebral infection (or) lymphoma were selected. These 26 cases went through a second selection process in which the presence of cerebral infarction, in the absence of the condition mentioned, was verified. Results indicate 10 (5.5%) cases fulfilled the inclusion criteria and demonstrated similar hypoxic ischemic lesion. Small vessel thickening was seen in all cases and perivascular space dilatation, infarction and pigment deposition with vessel wall mineralization and perivascular inflammatory cell infiltrates were seen in some cases. Vasculites was not found. One patient had a transient ischemic attack and no patient had a stroke found an HIV associated vasculopathy with similar features in all risk groups. In AIDS patient presenting with stroke (or) transient ischemic attack, potentially treatable causes such as cerebral co infection (or) tumor, should be sought.

Crocker,KS.et al., (2003) studied about gastro intestinal manifestations of the Acquired immuno deficiency syndrome. Patients frequently suffer from weight loss, diarrhea, mal absorption and cachexia. Many factors complicate the course of AIDS related gastro intestinal disease, including decreased food intake, increased metabolic demand and nutritional requirements and identifiable gastro intestinal pathology. Gastro intestinal pathology is well documented and in approximately 50% of persons with AIDS related gastro intestinal disease much of the chronic gastro intestinal dysfunction is caused by recurring opportunistic pathogens that are resistant to chemotherapy. Often patient care and long term management can focus only on fluid and electrolyte balance, nutritional support and symptom control. Even clinically stable patients have been diagnosed as chronically malnourished and for reasons that remain unclear, are prone to rapid nutritional deterioration during disease exacerbations. The use of nutritional support as adjunctive therapy early in the course of disease becomes an issue. Although improving nutrition has not been shown to reverse any of the cellular immuno deficiency caused by HIV infection, quality of life may be improved.

c. STUDIES RELATED TO PREVENTION OF OPPORTUNISTIC PREVENTION

Subbaraman, R. et al., (2009) conducted a study about factors associated with Anaemia in HIV infected individuals in Southern India. Anaemia accelerates disease progression and increases mortality among HIV infected individuals. Hemoglobin values of adults presenting to an HIV tertiary care center in India between 1996 and 2007 were collected (n=6996) multivariate logistic regression analysis was performed to examine the association among anemia, HIV progression and co morbidities. Overall Anemia prevalence was 41%. Twenty percent of patients with CD₄ counts > 500 cells/ml were anemic, compared with 64% of those with CD₄ counts < 100 cell/ml. Management of anemia should focus on antiretroviral therapy, nutritional supplementation and TB control.

Wig, N. et al, (2008) conducted a study in dietary adequacy in Asian Indians with HIV. Malnutrition is endemic in developing countries; which also bear the brunt of the human immuno deficiency virus (HIV). Pandemic Dietary inadequacy is a major cause of malnutrition and few studies have been done to assess dietary adequacy in HIV infected

individuals and the factors affecting intake. Dietary intake of 71 consecutive patients was determined using 24 hours dietary recall, with the help of a questionnaire and a structured interview and then compared with recommended dietary allowances. The dietary intake of energy total, fiber, Vitamin C and Iron were significantly less than the recommended energy allowance. The recommended protein allowance was reached by 43.4% males and 44.4% females and 41.5% males and 39.9% females consumed more than the upper limit of the recommended fat intake. Intake of major nutrients was also significantly less when compared to the national average intake on bivariate analysis; the factors affecting these inadequacies were found to be annual per capita income, depending on another for livelihood, CD₄ counts more than 200/C mm and absence of antiretroviral therapy. On multivariate analysis, only dependency on another was found to significantly influence energy intake. Dietary counseling and efforts to improve food security are important in management of these patients.

Bradley Springer, L. et al., (1991) conducted a multilevel analysis about nutritional support in the HIV infection. It is a long term process in many individuals. The progression HIV disease is beginning to

demonstrate many commonalities with other chronic diseases. Although research has not yet shown clear cut evidence that diet can make a difference in the course of disease in HIV infected clients, nutrition should be viewed as an important component of holistic care for HIV infected clients because wasting and symptoms of malnutrition are common problems associated with these clients and nutrition has proven to be a beneficial component of care in other chronic conditions. Concludes that there is a potential benefit from integrating nutritional assessment, diagnosis and education into the holistic care of HIV infected clients at the personal, Interpersonal, organizational and societal levels.

Merrill, A., (1995) reported about AIDS and malnutrition. Dual assaults on the body when there occur together, their compounding effect promote altered metabolism inadequate intake and malabsorption which further impair the immune function and contribute to Human Immuno deficiency virus wasting. Careful dietary management can help meet nutritional needs without further compromising the immune status.

Bacon,P.(1996) reported that nutrition and diet plan an important role in regulating the immune system. People with HIV disease are

proving weight loss for a number of reasons although this is not inevitable. The aim of nutritional therapy is to preserve body weight particularly lean body mass.

Savy,GK.(2002) reported that Glutamine is the most abundant amino acid in the body. It is also one of the most widely researched amino acids with multiple clinical trails. On various aspects of medical nutritional care including gastro intestinal disease, oncology burn – trauma; HIV/AIDS and chronic wound.

Capili,B. and Anastasi,JK.(2008) conducted a study to examine the differences in nutritional intake and body mass intake (BMI) in HIV patients with chronic diarrhea via secondary analysis of patient's nutritional diaries. Seventy five ambulatory patients with HIV were included in this study. Patients were categorized using baseline BMI as normal weight BMI (18.5 – 24.9 Kg/m²) overweight (BMI 25 – 29 Kg/m²) and obese (BMI = 30.0 Kg/m²). Secondary nutritional diaries were used to estimate diets in terms of dietary fats, cholesterol, fiber, protein and sugar. Results indicates 39.7% participants were overweight and 13.3% were obese results were not statistically different between groups, grams of fiber intake were lowest for individuals with BMI > = 30.0 Kg/m².

Chou,FY. et al.,(2004)conducted a study to identify the category schemes of self care strategies and sources of information for symptom management reported by HIV positive individuals. A secondary analysis was conducted in a large data set of an HIV/AIDS symptom management study. Narrative data of symptom self care management strategies and source of information for symptom management were analyzed by a content analysis technique. The 359 participants in the study reported; 776 symptom self care strategies and 526 sources of information for these strategies. Self care strategies were summarized into eight categories. Medication (23.45%), self comforting (15.21%), complementary treatments (14.69%), daily activities (12.89%), diet changing (10.95%), helps seeking (9.28%), spiritual care (6.83%), and genuine (6.70%). It shows that people with HIV/AIDS not only seek the help medications, but also follow a wide array of others. Self developed (or) self taught non pharmaceutical strategies to alloy their symptoms.

Corless et al.,(2002) conducted a study to identify when fatigue is reported as a problem by people who are HIV positive what the perception of fatigue is, and which self care behavioural are used and with what efficacy multisite descriptive study to convenience sample of 422 self

identified people who are HIV positive at university based AIDS clinic in United states. The sixth most reported symptom in this study, fatigue was treated with variety of self designed strategies. The most frequently used interventions were supplements, vitamins and nutrition followed by sleep and rest; exercise adjusting activities, approaches and thoughts; distraction and complementary alternative therapies.

Xirton, C. al., (2001) reported that promote healthy behaviors such as smoking cessation, exercise, screening for medical conditions. Recent treatments have prolonged the life expectancy of persons with HIV.

Kenneth, D. Phillips., (2005) A descriptive, co relational design was used to examine the associations of sleep quality and stage of illness with health-related quality of life (HRQOL) in HIV-infected African-American women. Participants were recruited from 12 health clinics and AIDS service organizations (ASO) in Georgia, North Carolina, and South Carolina. The sample consisted of 144 African-American women who ranged in age from 20 to 48?years ($m=34.8$, $SD=6.8$). The Pittsburgh Sleep Quality Index (PSQI) and the Medical Outcomes Short-Form Health Survey (SF-36) were administered. Participants were categorized as good sleepers (PSQI global score ≤ 7) or poor sleepers (PSQI global score > 7)

using the median global sleep quality score. Differences in HRQOL between good and poor sleepers, as measured by the SF-36, were tested using MANOVA. Good sleepers scored significantly higher .

Smith, BA. et al., (2004) conducted a study to describe physical and leisure activities, life satisfaction, depression and body composition of HIV positive Hispanics in Puerto Rico and compares body composition, CD₄ counts, depression, leisure time and life satisfaction of participants classified as physically active (or) inactive. Sixty eight individuals were evaluated using questionnaire and biophysical measurement. Physically active participants had higher life satisfaction scores and healthier body composition as compared to these physically inactive. Health professionals must encourage the promotion of a physically active life style among HIV positive Hispanics.

Carson, V B. (1993) conducted a study on prayer, medication, exercise and special diet impact on AIDS. Literature on long term survivors with AIDS is replete with anecdotal evidence linking survival to such things as holding a positive attitude toward the illness. Participating in health promoting behavior engaging in spiritual activities, taking part in AIDS related activities. To determine whether there is quantitative

research to support this anecdotal evidence, 100 subjects who were either HIV positive or diagnosed with ARC or AIDS, completed Kobasa's personal views survey and responded to questions regarding perception of their physical, emotional and spiritual health. The results demonstrated positive relationship between hardiness and perception of physical, emotional and spiritual health, Proper meditation, exercise and use of special diets.

Schifitto, G. (2001) stated that HIV-associated distal sensory polyneuropathy (DSP) is a common complication of AIDS. No effective treatment is available. The authors investigated the long-term effect (48 weeks) of the neurotrophin nerve growth factor (NGF) in an open-label study of 200 subjects with HIV-associated DSP. In the double-blind study, the authors showed that NGF was safe and well tolerated and significantly improved pain symptoms. However, there was no improvement of neuropathy severity as assessed by neurological examination, quantitative sensory testing, and epidermal nerve fiber density.

d. STUDIES RELATED TO STRUCTURED TEACHING PROGRAMME

Lakshmi, K. (2005) had conducted a study to find the effectiveness of structured teaching programme on knowledge and practice of AIDS patients regarding prevention of opportunistic infections in a government general hospital, yelehanka. Structured interview schedule and rating scale were used to assess the knowledge and practice of AIDS patients. Findings of the study showed that mean pretest and post test knowledge scores were(16.57,18.43) mean pretest and post test practice scores were(9.98,11.4).

CHAPTER- III

METHODOLOGY

This chapter deals with the research methodology adopted for this study. Methodology of research indicated the general pattern for organizing the procedure for gathering valid and reliable data for the study. It includes the research approach, research design, population, sample and sampling technique, selection and development tool, data collection procedure and analysis.

RESEARCH APPROACH

An evaluative approach is used to evaluate the effectiveness of structured teaching programme on prevention of opportunistic infection in terms of knowledge and practice among patients with AIDS admitted in Perundurai Medical College Hospital at Perundurai.

RESEARCH DESIGN

The Research design adopted for the present study was one group pretest post test pre experimental design.

Schematic representation:

Group	Pre test	Intervention	Post test
I	O1	X	O2

THE SYMBOLS USED

Group I – Patients with AIDS.

O1 - Pre test knowledge and practice regarding prevention of
Opportunistic infections among patients with AIDS.

X - Implementing structured teaching program on prevention of
Opportunistic infections among patients with AIDS.

O2 - Post test knowledge and practice regarding prevention of
Opportunistic infections among patients with AIDS.

SETTING OF THE STUDY

The study was conducted in IRT- Perundurai Medical College and Hospital at Perundurai sanatorium, Perundurai. It belongs to road Transport Corporation, situated 2 km away from Perundurai. It is 364 bedded multi specialty hospital. It has all the specialties including medicine , surgery, ENT, pediatric , nephrology , orthopedics, diabetology, pulmonology.It has the service like out patient department , inpatient

department ,emergency and intensive care unit . It has separate male and female medical wards, Intensive care units, Special wards, Obstetrics and Gynecology wards, Special and deluxe ward and other services like laboratory services, blood bank. It also has AIDS ward and outpatient services. AIDS ward consists of 50 bed and its inpatient turnover is approximately 3-4 per week, 45 per month, 550 per annum , outpatient service turn over is about 200 per month and among them 80% of them came with opportunistic infections. This hospital also has voluntary testing and counseling centre for AIDS patient.

POPULATION

The target population selected for this study includes patients who are diagnosed as AIDS.

SAMPLE

In the present study sample constitutes of patients who are diagnosed as AIDS within the age group of 20-50 years admitted in IRT-Perundurai Medical College Hospital, Perundurai sanatorium.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- ❖ Male and female patients diagnosed as AIDS.

- ❖ Patients within the age group of 20 -50 years.
- ❖ Patients who could understand Tamil.
- ❖ Patient with hospital stay of minimum 7 days.

Exclusion criteria

- ❖ AIDS patients who are critically ill.
- ❖ Patients who were not willing to participate in this study.
- ❖ Patients who were sick and unable to communicate.

SAMPLE SIZE:

The Samples selected for the present study was 50. Clients who met the inclusion criteria were selected for this study.

SAMPLING TECHNIQUE:

Purposive sampling technique was used for selection of the sample.

INSTRUMENT AND SCORING PROCEDURE

Description of the tool

It consist of 3 parts

Part -- I

Consist of selected demographic variables of patients with AIDS such as age, sex, marital status, educational status, occupation, area of residence, and duration of illness.

Part -- II

Consists of structured interview schedule used to assess the knowledge regarding prevention of opportunistic infections among patients with AIDS. It consist of 25 multiple choice type questions. Each questions had four options out of which one is the correct answer.

Part -- III

Structured interview schedule used to assess the practice on prevention of opportunistic infections among patients with AIDS. It consist of 15 dichotomous questions with two options" YES" (or)"NO"

INSTRUMENT AND SCORING PROCEDURE:

Part - II

Structured interview schedule : Scoring procedure was used to assess the knowledge regarding prevention of opportunistic infections among patients with AIDS which consists of 25 multiple choice questions,

each correct answer was given a score of 'one'(1) and wrong answer was scored as 'zero'(0). The total score was 25.

The score was interpreted as follows;

Knowledge score

Level of knowledge	Score	Percentage (%)
Adequate	17-25	68-100%
Moderately adequate	9-16	36-64%
Inadequate	0-8	>33%

Part-III

Structured interview schedule to assess the practice regarding prevention of opportunistic infection among patients with AIDS.

If consist of 15 questions

A score of one (1) is allotted to the correct response, score of zero (0) to the wrong response and the total score was 15.

Practice scores

Level of practice	Score	Percentage (%)
Adequate	11-15	73.3-100%
Moderately adequate	6-10	40-66.6%
Inadequate	1 -5	>33.3%

VALIDITY AND RELIABILITY OF TOOL

VALIDITY

The content validity of the tool was done by submitting the tool to 5 experts -4 nursing expert and one medical expert for validating the tool modifications were made based on their suggestions.

RELIABILITY

The reliability of the structured interview schedule to assess knowledge and practice on prevention of opportunistic infections among patients with AIDS was established by testing the stability and internal consistency. Stability was assessed by test Re test method, where Karl Pearson correlation of coefficient formula was used to find the effectiveness of the tool. For knowledge the value was found to be reliable ($r=0.9$). Internal consistency was assessed by using split half technique where spearman's brown prophecy was used. The value was found to be reliable ($r=0.8$). Hence the structured interview schedule was found to be reliable.

The test retest method was used to estimate the stability of practice questionnaire. It was found to be reliable($r=0.7$). The internal consistency

was assessed by using split half method where spearman's brown prophecy formula was used. The value was found to be reliable($r=0.78$).

PILOT STUDY:

Pilot study was conducted in IRT- Perundurai Medical College and Hospital, for a period of 7days. Written permission was obtained from the Dean .The researcher obtained oral permission from each participant for the study. Purpose of the study was explained to the patients prior to the study. 5 patients who met the inclusion criteria were selected by using purposive sampling technique. The researcher established rapport with them and demographic variables were collected. The knowledge and practice regarding prevention of opportunistic infection was assessed using structured interview schedule for 40-45 minutes. Structured teaching programme was given for about 40 minutes immediately after pretest all 5 patients in a group using compact disc and television. Posttest was assessed on the 7th day with same structured interview schedule. Data were analyzed and the findings of the pilot study revealed that mean value of post test knowledge and practice scores were (0.8, 0.4) higher than the mean value of pre test knowledge and practice scores (0.4, 0.37). It revealed that it is feasible and practicable to conduct the main study.

DATA COLLECTION PROCEDURE:

The main study was conducted at IRT- Perundurai Medical College Hospital, Sanatorium block, Perundurai. The written permission was obtained from the Dean of Perundurai Medical College Hospital. Ward staff were informed about the objectives of the study. The data was collected in the month of August for a period of 5 weeks, during which 50 patients fulfilling the selection criteria were selected by purposive sampling. The investigator introduced about the purpose of the study and rapport was established. The patients from 4 wards -202, 203, female AIDS ward and male AIDS ward were selected for the study. Demographic data was collected from 3 to 4 patients per day. The knowledge and practice regarding prevention of opportunistic infections in AIDS patients was assessed using structured interview schedule and dichotomous questionnaire for 40-45 minutes. Structured teaching programme was given for 40 minutes using compact disc with television. The time period for data collection was between 9^{a.m} – 5^{p.m}. The post test was done on the 7th day using the same structured knowledge and practice questionnaire and results were analyzed using statistical measurement.

PLAN FOR DATA ANALYSIS:

S. No	Data analysis	Method	Remarks
1.	Descriptive statistics	Mean, frequency standard deviation	To describe the demographic variables of patients with AIDS. To assess pre and post test knowledge and practice regarding prevention of opportunistic infections among patients with AIDS.
2.	Inferential statistics	Paired 't' test	To evaluate the effectiveness of Structured teaching programme regarding prevention of opportunistic infections among patients with AIDS.
		Karl Pearson correlation Chi- square test.	To determine the correlation between knowledge and practice regarding prevention of opportunistic infections among patients with AIDS. To find out the association between posttest knowledge and practice regarding prevention of opportunistic infections among patients with AIDS with their selected demographic variables.

PROTECTING HUMAN SUBJECTS:-

The proposed study was conducted after the approval of dissertation committee. The written permission was obtained from Dean and Nursing superintendent of IRT-perundurai Medical College Hospital, Perundurai. Verbal consent was obtained from each participant before data collection. Assurance was given to them that confidentiality will be maintained throughout the study and it was maintained.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data collected to evaluate the effectiveness of the structured teaching programme regarding prevention of opportunistic infections in terms of knowledge and practice among patients with AIDS.

Data were collected from 50 patients with AIDS in IRT- Perundurai Medical College Hospital at Perundurai by using structured knowledge questionnaire and practice dichotomous questionnaire.

The data thus obtained were analyzed and presented under the following headings:-

SECTION - A	-	Distribution of demographic variables.
SECTION - B	-	Comparison between pre and posttest Knowledge and practice scores regarding Prevention of opportunistic infections among patients with AIDS.
SECTION - C	-	Correlation of posttest knowledge scores with post test practice scores regarding Prevention of opportunistic infections among patients with AIDS.
SECTION - D	-	Association between posttest knowledge scores regarding Prevention of opportunistic infections among patients with AIDS with their selected demographic variables
SECTION -E	-	Association of posttest practice scores regarding Prevention of opportunistic infections among patients with AIDS with their selected demographic variables

SECTION - A DISTRIBUTION OF DEMOGRAPHIC VARIABLES

Table - 1 : **Frequency and percentage distribution of**
demographic variables of patients with AIDS .

n=50

S. No	DEMOGRAPHIC VARIABLES	NO. FREQUENCY	PERCENTAGE (%)
1.	AGE		
	20-30Years	12	24
	31-40 Years	36	72
	41-50 Years	2	4
2.	SEX		
	Male	24	48
	Female	26	52
3.	MARRITAL STATUS		
	Married	38	76
	Unmarried	7	14
	Widow /widower	5	10
	Divorced	-	-
4.	EDUCATIONAL STATUS		
	No formal education	3	6
	Primary education	25	50
	High school	18	36
	Higher Secondary	1	2
	Graduates	3	6

5.	OCCUPATION		
	coolie	15	30
	Un occupied	2	4
	Self employee	21	42
	Private employee	12	24
	Government employee	-	-
6.	AREA OF RESIDENCE		
	Urban	31	62
	Rural	19	38
7.	DURATION OF ILLNESS		
	Newly diagnosed	11	22
	Below 5 years	25	50
	Above 5 years	14	28
	Above 10 years	-	-

Table (1) showed that distribution of patients with AIDS based on their demographic variables.

AIDS patients who belongs to the age group of 20-30 years were 12(24%), 31-40 years were 36(72%), and 41-50years were 2(4%) (Figure: 2)

The majority of the AIDS patients were females 26(52%), and males were 24 (48%) (Figure: 3)

The majority of the AIDS patients 38(76%) were married, 7(14%) were unmarried, and 5(10%) were widow/widower. (Figure: 4)

The data showed that 3 (6%) AIDS patients were having no formal education, 25(50%) were studied up to primary school, 18(36%) were studied up to high school, 1(2%) were studied up to higher secondary and 3(6%) were graduates. (Figure: 5)

The data showed that 15(30%) AIDS patients were coolie worker, 2(4%) were unoccupied, 21(42) self employee, and 12(24%) were private employee. (Figure: 6)

The majority of AIDS patients 31(62%) were from urban areas and 19(38%) were from rural areas. (Figure: 7)

The data showed that 11(22%) of AIDS patients were newly diagnosed, 25 (50%) were had less than 5 years and 14(28%) were diagnosed more than 5 years. (Figure: 8)

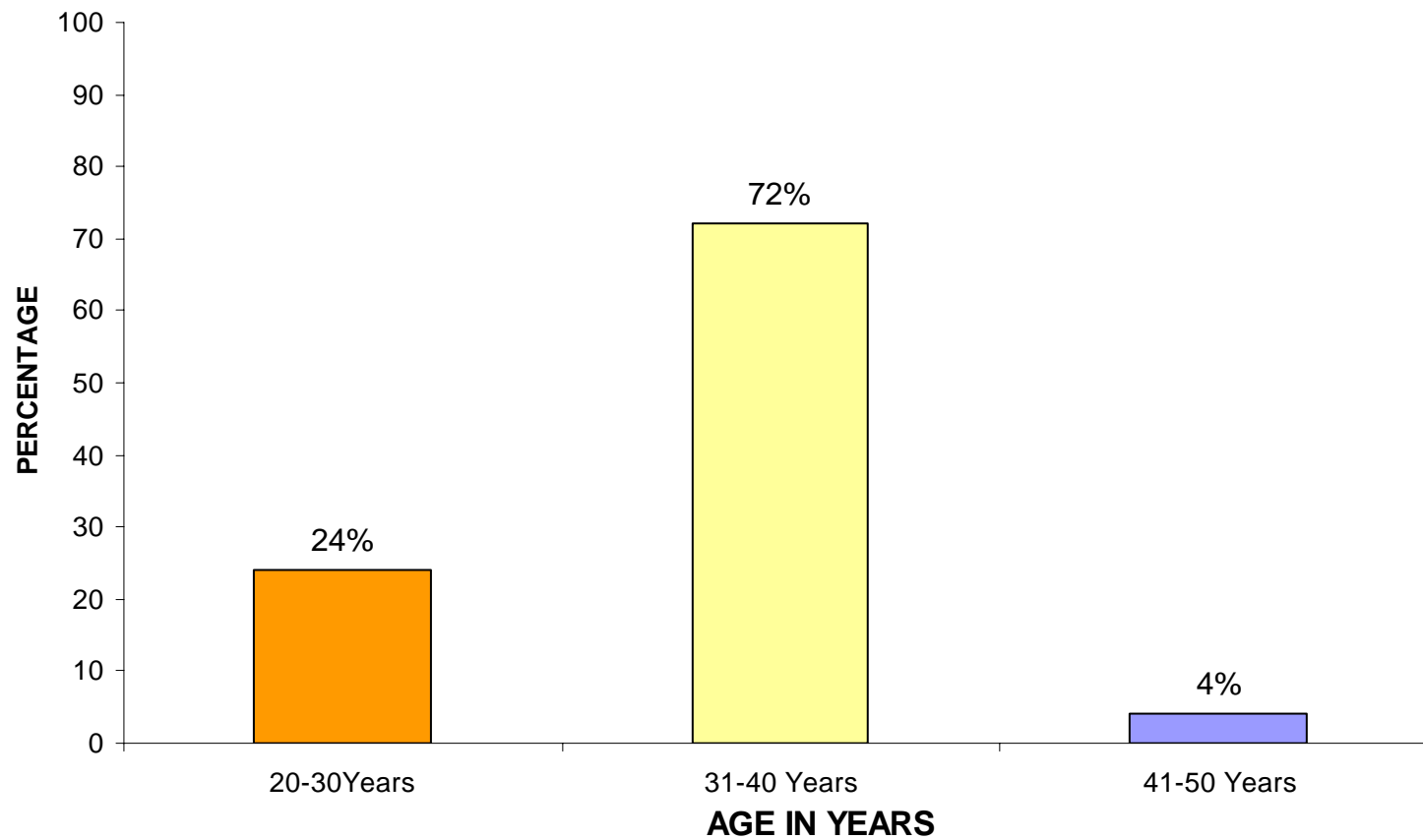


Fig. 2. Percentage distribution of patients with AIDS according to their age.

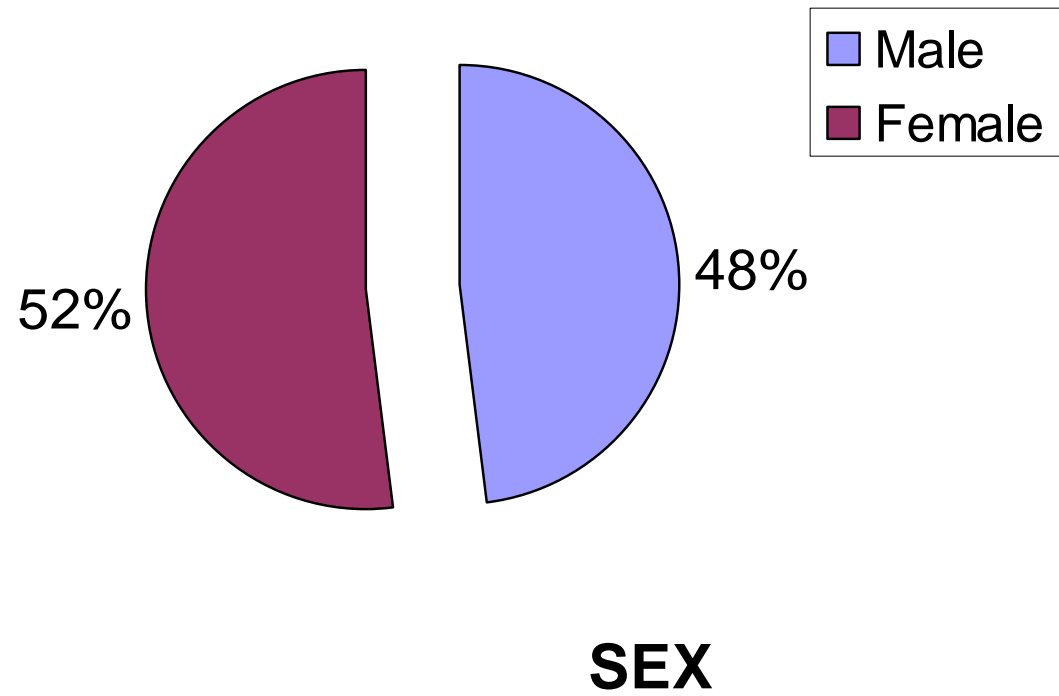


Fig. 3. Percentage distribution of patients with AIDS according to their sex.

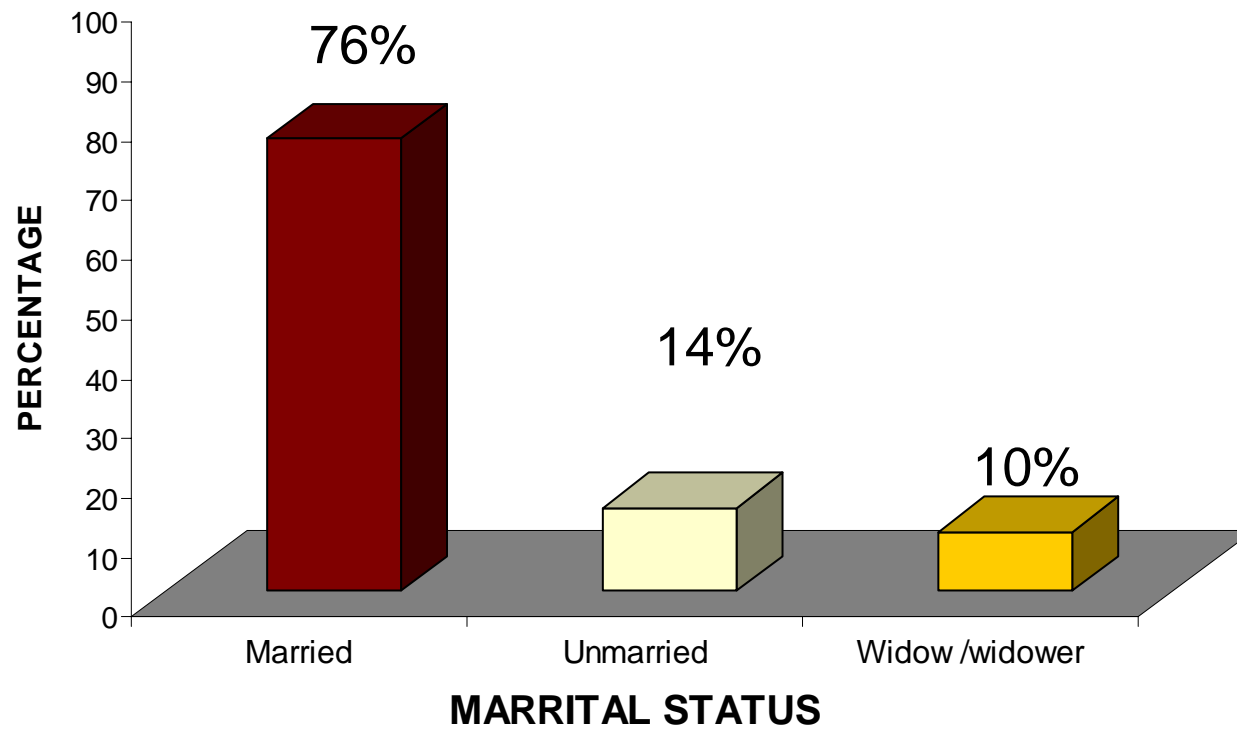


Fig. 4. Percentage distribution of patients with AIDS according to their marital status

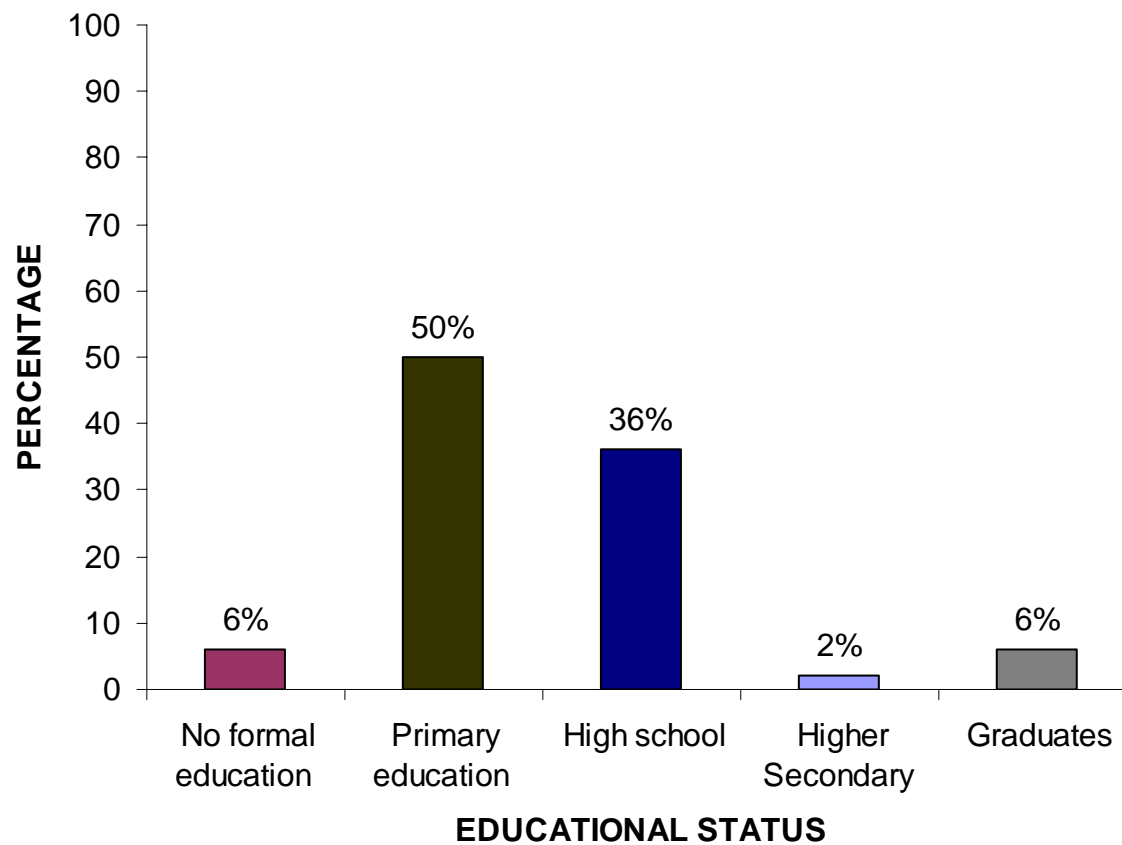


Fig. 5. Percentage distribution of patients with AIDS according to their educational status.

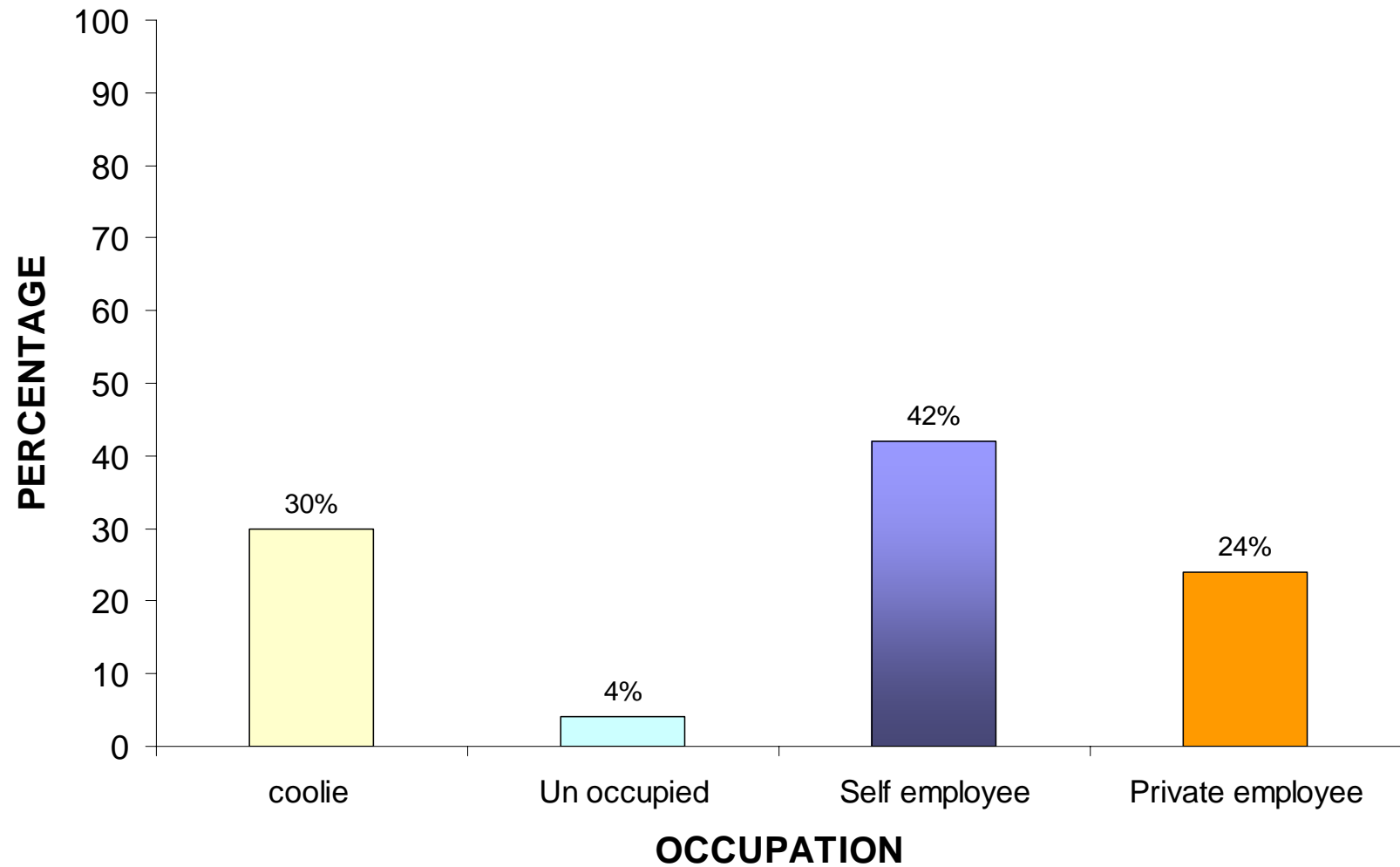


Fig.6. Percentage distribution of patients with AIDS according to their occupation

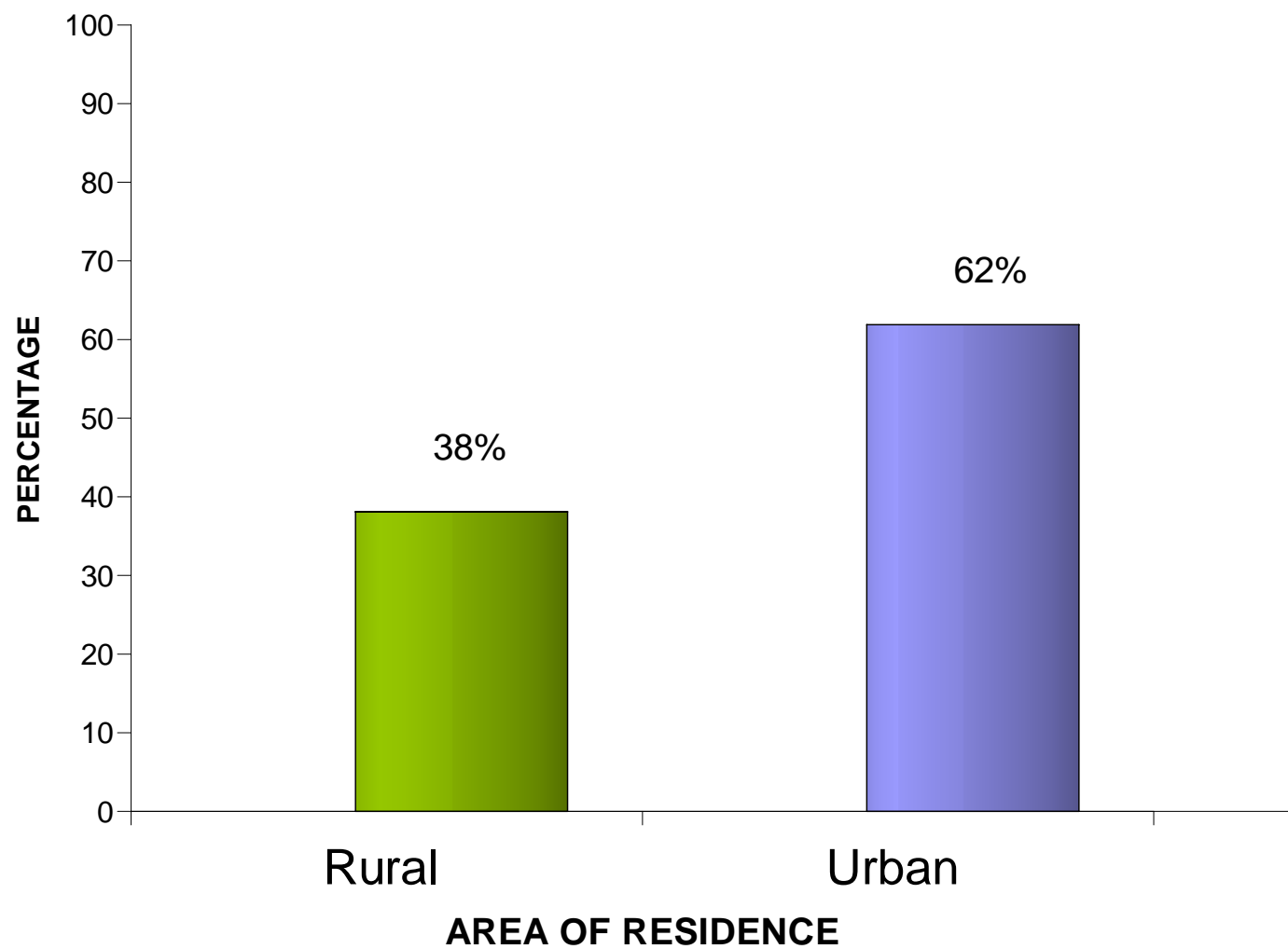


Fig.7. Percentage distribution of patients with AIDS according to their area of residence.

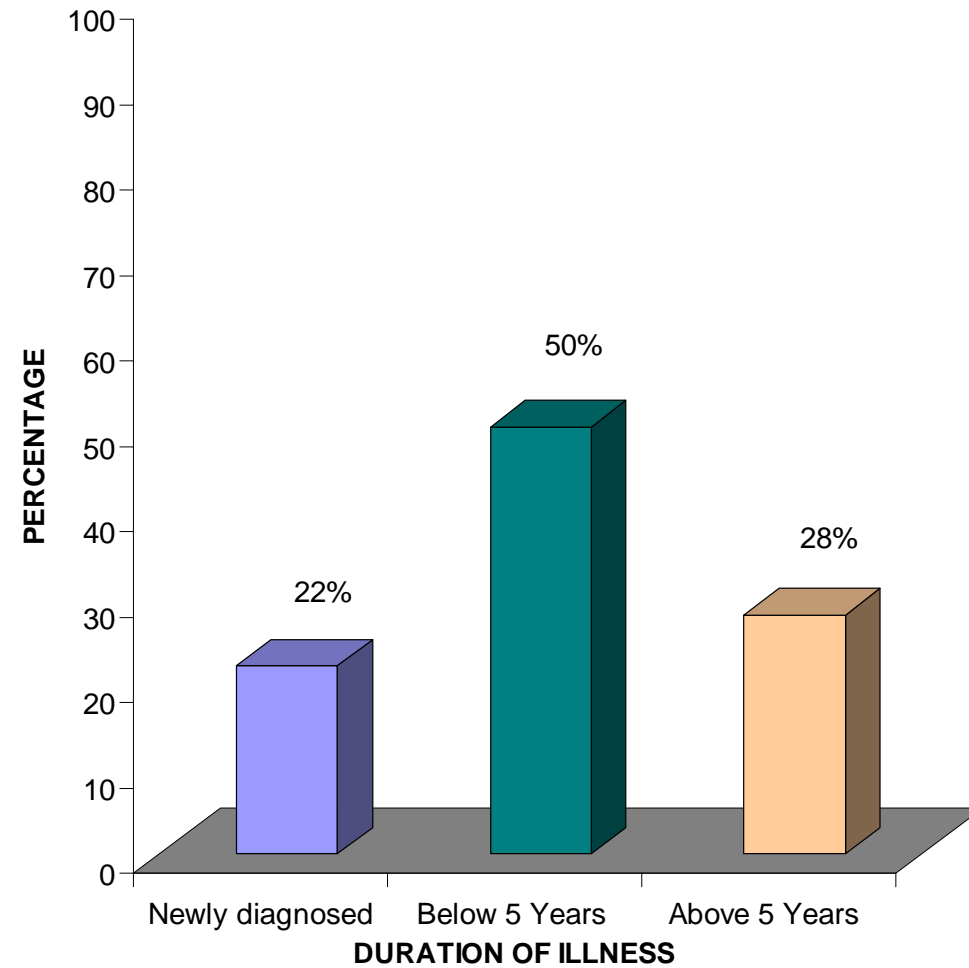


Fig.8. Percentage distribution of patients with AIDS according to their duration of illness.

SECTION - B: COMPARISON BETWEEN PRE AND POST TEST KNOWLEDGE AND PRACTICE SCORES REGARDING PREVENTION OF OPPURTUNISTIC INFECTIONS AMONG PATIENTS WITH AIDS.

Table 2: Comparison between the pre and post test knowledge scores regarding prevention of opportunistic infections among patients with AIDS.

n=50

Level of knowledge	Pretest		Posttest	
	f	%	f	%
Adequate knowledge	8	16	32	64
Moderately Adequate knowledge	19	38	15	30
Inadequate knowledge	23	46	3	6
Total	50	100	50	100

Table : 2 showed that pretest among 50 patients with AIDS 8(16%) had adequate knowledge, 19 (38%) patients had moderately adequate knowledge and 23 (46%) patients had inadequate knowledge regarding prevention of opportunistic infections.

In posttest 32(64%) had adequate knowledge, 15(30%) had moderately adequate knowledge and 3 (6%) had inadequate knowledge regarding prevention of opportunistic infections.

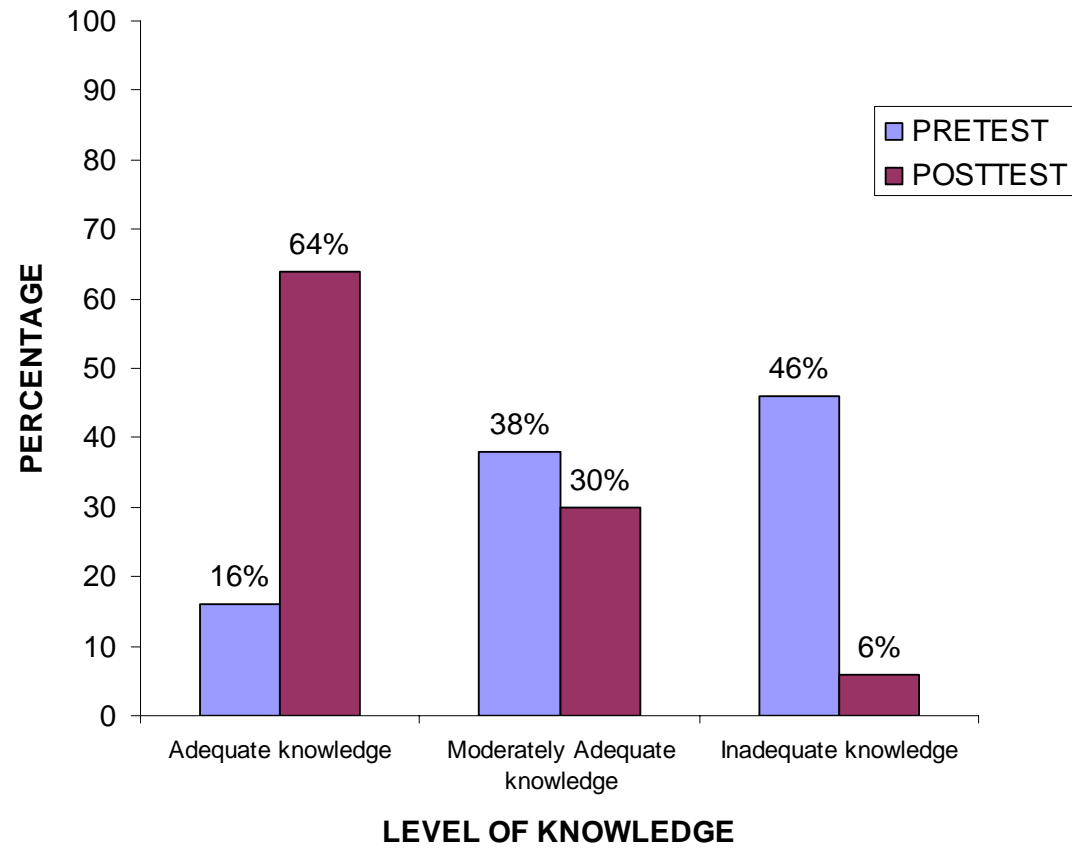


Fig.9: Comparison of the pre test and post test knowledge scores of patients with AIDS.

Table 3: Comparison between pretest and post test practice Scores regarding prevention of opportunistic infections among patients with AIDS.

n=50

Level of practice	Pretest		Posttest	
	f	%	f	%
Adequate practice	10	20	24	48
Moderately Adequate practice	18	36	20	40
Inadequate practice	22	44	6	12
Total	50	100	50	100

Table 3: showed that pretest among 50 patients with AIDS 10(20%) had adequate practice, 18(36%) had moderately adequate practice and 22(44%) had inadequate practice regarding prevention of opportunistic infections.

In post test 24 (48%) had adequate practice, 20(40%) had moderately adequate practice and 6(12%) had inadequate practice regarding prevention of opportunistic infections.

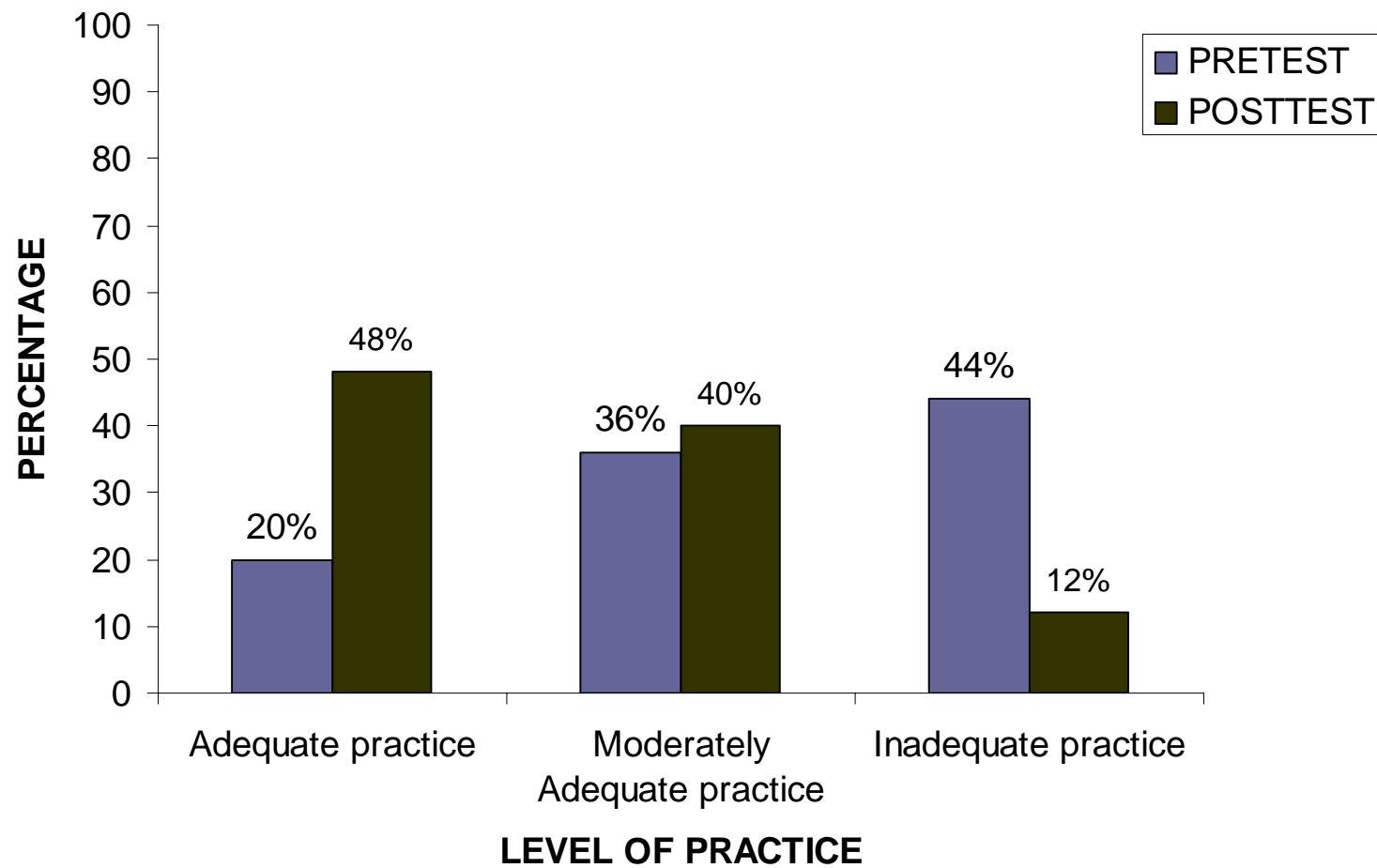


Fig.10.Comparison of the pre test and post test practice scores of patients with AIDS.

Table - 4: comparison of Mean, SD and 't' value of pretest and post test knowledge scores of patients with AIDS.

n=50

S. No	VARIABLES	MEAN	SD	't' value	TABLE VALUE
1.	Pre test	11.42	4.51	13.5	1.671
2.	Post test	16.6	4.28		

df (49)

(P<0.05)

Table (4) showed that the mean pretest and post test knowledge scores regarding prevention of opportunistic infections among patients with AIDS were 11.42 (SD \pm 4.51) and 16.6 (SD \pm 4.28) respectively.

The post test mean scores were higher than the pretest mean scores; The 't' value is 13.5. The paired "t" test shows that calculated value (13.5) is greater than the table value (1.671).

Table - 5: comparison of Mean, SD and 't' value of pretest and post test practice scores of patients with AIDS.

n=50

S. No	VARIABLES	MEAN	SD	't' Value	TABLE VALUE
1.	Pre test	7.28	2.77	17.27	1.671
2.	Post test	9.14	3.08		

df (49)

(P<0.05)

Table (5) showed that the mean pretest and post test practice scores regarding prevention of opportunistic infections among patients with AIDS were 7.28 (SD \pm 2.77) and 9.14 (SD \pm 3.08) respectively.

The post test mean scores were higher than the pretest mean scores. The 't' value is 17.27. The paired "t" test shows that calculated value (17.27) is greater than the table value (1.671).

SECTION - C: CORRELATION BETWEEN POST TEST KNOWLEDGE SCORES WITH PRACTICE SCORES REGARDING PREVENTION OF OPPORTUNISTIC INFECTIONS AMONG PATIENTS WITH AIDS.

Table - 6: Correlation between post test knowledge scores with practice scores regarding prevention of opportunistic infections among patients with AIDS.

n=50

S. No	VARIABLES	MEAN	SD	Co-efficient Correlation 'r' value	TABLE VALUE
1.	Post test knowledge scores	16.6	4.28	0.87	0.2108
2.	Post test practice scores	9.14	3.8		

df(48)

(P<0.05)

Table (6) showed that there was a positive correlation ($r=0.87$) between mean post test knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.

SECTION - D: ASSOCIATION BETWEEN POST TEST KNOWLEDGE SCORES REGARDING PREVENTION OF OPPORTUNISTIC INFECTION OF PATIENTS WITH AIDS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Table - 7: Association between post test knowledge scores regarding prevention of opportunistic infection of patients with AIDS with their selected demographic variables.

n=50

Demographic Variables	Level of knowledge						χ^2	Table Value	Inference
	Adequate		Moderately Adequate		Inadequate				
	f	%	f	%	f	%			
1. AGE									
20-30 Years	5	10	6	12	1	2	3.417	3.841	NS
31-40 Years	25	50	9	18	2	4			
41-50 Years	2	4	-	-	-	-			
2. SEX									
Male	20	40	2	4	2	4	10.326	3.841	S
Female	12	24	13	26	1	2			
3. MARITAL STATUS									
Married	24	48	11	22	3	6	1.27	3.841	N.S
Unmarried	3	6	4	8	-	-			
Widow/									
Widower	5	10	-	-	-	-			
Divorced	-	-	-	-	-	-			

4. EDUCATIONAL STATUS									
No formal education	-	-	-	-	3	6	1.03	3.841	N S
Primary education	17	34	8	16	-	-			
High school	12	24	6	12	-	-			
Higher secondary	-	-	1	2	-	-			
Graduate	3	6	-	-	-	-			
5. OCCUPATION									
Coolie	5	10	7	14	3	6	3.702	3.841	N S
Un employee	-	-	2	4	-	-			
Self employee	15	30	6	12	-	-			
Private employee	12	24	-	-	-	-			
Govt. employee	-	-	-	-	-	-			
6. AREA OF RESIDENCE									
Rural	9	18	10	20	-	-	3.677	3.841	N S
Urban	23	46	5	10	3	6			
7.DURATION OF ILLNESS									
Newly diagnosed	3	6	8	16	-	-	3.842	3.841	S
Below 5 years	22	44	-	-	3	6			
Above 5 years	7	14	7	14	-	-			
Above 10 years	-	-	-	-	-	-			

df (1)

S - Significant, N.S. - Not Significant

P< 0.05 level

Table: 7 showed that Chi square values were calculated to find out the association between the post test knowledge regarding prevention of opportunistic infection among patients with AIDS with their selected demographic variables. Among the demographic variables sex (10.326) and duration of illness (3.842) were associated with knowledge. Other demographic variables such as age, marital status, educational status, occupation, area of residence had no significant association with knowledge regarding prevention of opportunistic infections.

**SECTION: E ASSOCIATION BETWEEN POST TEST PRACTICE
SCORES REGARDING PREVENTION OF OPPORTUNISTIC
INFECTION OF PATIENTS WITH AIDS WITH THEIR SELECTED
DEMOGRAPHIC VARIABLES**

**Table 8: Association between post test practice scores regarding
prevention of opportunistic infection among patients with AIDS
with their selected demographic variables**

n=50

Demographic Variables	Level of knowledge						χ^2	Table Value	Inference
	Adequate		Moderately Adequate		Inadequate				
	f	%	f	%	f	%			
1.AGE									
20-30 Years	5	10	5	10	2	4	0.252	3.841	NS
31-40 Years	19	38	13	26	4	8			
41-50 Years	-	-	2	4	-	-			
2SEX									
Male	16	32	5	10	3	6	6.442	3.841	S
Female	8	16	15	30	3	6			
3.MARRITAL STATUS									
Married	18	36	18	36	2	4	0.023	3.841	N.S
Unmarried	4	8	1	2	2	4			
Widow/Widower	2	4	1	2	2	4			
Divorced	-	-	-	-	-	-			

4.EDUCATIONAL STATUS									
No formal education	-	-	-	-	3	6	0.79	3.841	NS
Primary education	15	30	8	16	2	4			
High school	9	18	8	16	1	2			
Higher secondary	-	-	1	2	-	-			
Graduate	-	-	3	6	-	-			
5.OCCUPATION									
Coolie	4	16	8	16	3	6	2.203	3.841	NS
Un employee	-	-	-	-	2	4			
Self employee	12	24	9	18	-	-			
Private employee	8	16	3	6	1	2			
Govt. employee	-	-	-	-	-	-			
6.AREA OF RESIDENCE									
Rural	8	16	9	18	2	4	0.43	3.841	NS
Urban	16	32	11	22	4	16			
7.DURATION OF ILLNESS									
Primary stage	2	4	6	12	3	6	5.495	3.841	S
Below 5 years	19	38	3	6	3	6			
Above 5 years	3	6	11	22	-	-			
Above 10 years	-	-	-	-	--	-			

df (1)

NS - Not Significant, S-Significant P < 0.05

Table 8; showed that Chi square values were calculated to find out the association between the practice regarding prevention of opportunistic infection among patients with AIDS with their selected demographic variables. Among the demographic variables sex (6.422) and duration of illness (5.495) were associated with practice. Other demographic variables such as age, marital status, educational status, occupation and area of residence had no significant association with practice regarding prevention of opportunistic infections.

CHAPTER-V

DISCUSSION

This chapter presents the interpretation of the statistical findings. It has been discussed based on the objectives of the study. The aim of the study was to evaluate the effectiveness of structured teaching programme in terms of knowledge, and practice of patients with AIDS regarding prevention of opportunistic infections at IRT- Perundurai Medical College and Hospital, Perundurai. A sample of 50 patients with AIDS who met the inclusion criteria were selected for the study by using purposive sampling method. After the pre test, structured teaching programme was given. Post test was done after 7 days of intervention.

Description of the sample characteristics:

An AIDS patients who belongs to the age group of 20-30 years were 12(24%), 31-40 years were 36(72%), and 41-50years were 2(4%). The majority of the AIDS patients were females 26(52%), and males were 24 (48%). The majority of the AIDS patients 38(76%) were married, 7(14%) were unmarried, and 5(10%) were widow/widower. The data showed that 3 (6%) AIDS patients were having no formal education, 25(50%) were studied up to primary school, 18(36%) were

studied up to high school, 1(2%) were studied up to higher secondary and 3(6%) were graduates. The data showed that 15(30%) AIDS patients were coolie worker, 2(4%) were unoccupied, 21(42%) were self employee, and 12(24%) were private employee. The majority of AIDS patients 31(62%) were from urban areas and 19(38%) were from rural areas. This findings was consistent with the study done by **Patil et al., (2004)** aimed to find relationship between the HIV and the area of residence. Study includes randomly selected 100 males 100 female adults were tested for the presence of STI and also for HIV .Out of 200 cases 4(2%) samples were reactive for VDRL ,no cases gonorrhea and Chlamydia were detected. 8 cases (4%) were positive for Trichomonas , Of the 12 cases of STI 4(8%) were seropositive for HIV and other 2% did not have any STI .As the prevalence of STI in the rural area is around 6% ,prevalence of HIV is 3%, so the incidence is very low as compared to urban population.

The data showed that 11(22%) of AIDS patients were newly diagnosed, 25 (50%) were diagnosed less than 5 years and 14(28%) were diagnosed more than 5 years.

The findings are discussed under the following headings:

1. To assess the pretest knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.
2. To assess the post test knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.
3. To compare the pretest and post test knowledge scores regarding prevention of opportunistic infections among patients with AIDS.
4. To compare the pretest and post test practice scores regarding prevention of opportunistic infections among patients with AIDS.
5. To correlate the post test Knowledge and post test practice scores regarding prevention of opportunistic infections among patients with AIDS.
6. Find out the association between post test knowledge scores on prevention of opportunistic infections among patients with AIDS with their selected demographic variables.
7. Find out the association between post test practice scores on prevention of opportunistic infections among patients with AIDS with their selected demographic variables.

FIRST OBJECTIVE: To assess the pre test knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.

Pretest knowledge scores regarding prevention of opportunistic infections among 50 patients with AIDS were assessed. The majority of the patients 23(46%) had inadequate knowledge, 19(38%) had moderately adequate knowledge, 8(16%) had adequate knowledge. Regarding practice of prevention of opportunistic infections revealed that 22(44%) has inadequate practice 18(36%) had moderately adequate practice and 10(20%) had adequate practice in pretest. It revealed that there was a need for structured teaching programme for patient with AIDS regarding prevention of opportunistic infections.

The findings are consistent with the findings of **Lakshmi K. (2005)**, who did a study to assess the knowledge of patients on prevention of opportunistic infection. The results of the study showed that 63.33% had inadequate knowledge, and 33.66% of patients had moderately adequate knowledge. Regarding practice 82.1% had inadequate practice, 17.9% had moderate adequate practice before structured teaching programme on prevention of opportunistic infection.

SECOND OBJECTIVE: To assess the post test knowledge and practice scores regarding prevention of opportunistic infections among patients with AIDS.

Posttest knowledge scores regarding prevention of opportunistic infections among 50 patients with AIDS were assessed. Among 50 patients 32(64%) had adequate knowledge, 15(30%) had moderately adequate knowledge, 3(6%) had inadequate knowledge. Assessing the practice regarding prevention of opportunistic infections revealed that 24(48%) had adequate practice, 20(40%) had moderately adequate practice and 6(12%) had inadequate practice in post test. It revealed that knowledge and practice had increased after implementation of structured teaching programme.

This finding is consistent with the findings of **Lakshmi K. (2005)**, who did a study on to assess the knowledge of patients on prevention of opportunistic infection. The results of the study showed that 21% had inadequate knowledge, 56.3% of patients had moderately adequate knowledge and 22.7 % had adequate knowledge. Regarding practice 18.5% had adequate practice, 38.4% had moderate adequate practice, 43.1% had inadequate practice after implementation of structured teaching programme.

THIRD OBJECTIVE: To compare the pretest and post test knowledge scores regarding prevention of opportunistic infections among patients with AIDS.

The assessment of knowledge scores of patients with AIDS after being exposed to structured teaching programme showed that knowledge scores had been markedly increased as evidenced by the posttest analysis. It revealed that the level of knowledge of patients with AIDS in the post test had a mean score of 16.6 ($SD \pm 4.28$) which was higher score compared to the mean score of 11.42 ($SD \pm 4.51$) in the pre test at <0.05 level of significance. Hence the Research hypotheses (H1) mean post test knowledge scores is significantly higher than the mean pretest knowledge scores was accepted.

This finding is consistent with the findings of **Lakshmi K., (2005)** who did a study on to assess the knowledge of patients on prevention of opportunistic infection. In her study result showed that post test mean scores (18.43) of knowledge is higher than the pretest mean score (16.57).

FOURTH OBJECTIVE: To compare the pretest and post test practice scores regarding prevention of opportunistic infections among patients with AIDS.

The assessment of practice scores of patients with AIDS after being exposed to structured teaching programme showed that practice scores had been markedly increased as evidenced by the posttest

analysis. It revealed that the level of practice of patients with AIDS in the post test, mean score 9.14 (SD \pm 3.08) was higher score compared to the pre test mean score 7.28 (SD \pm 2.77) at <0.05 level of significance. Hence research hypotheses (H₂) the mean post test practice scores is significantly higher than the mean pretest practice scores was accepted.

This finding is consistent with the study done by **Laksmi, K., (2005)** on prevention of opportunistic infections. It revealed that post test mean scores (11.4) of practice is higher than the pretest mean score (9.98)

FIFTH OBJECTIVE: To correlate the posttest knowledge scores with practice scores regarding prevention of opportunistic infection among patients with AIDS.

There was positive correlation ($r=0.87$) between mean post test knowledge and practice scores of patients with AIDS regarding prevention of opportunistic infections further inferred that knowledge and practice. Hence the research hypotheses (H₃) significant correlation between posttest knowledge score and posttest practice score was accepted.

SIXTH OBJECTIVE: To find out the association between post test knowledge scores regarding prevention of opportunistic infections with their selected demographic variables.

Chi square values were calculated to find out the association between the knowledge regarding prevention of opportunistic infections among patients with AIDS. Among demographic variables sex (10.326) and duration of illness (3.842) were associated with knowledge. Other demographic variables age, marital status, educational status, occupation, area of residence had no significant association regarding prevention of opportunistic infections.

The finding is consistent with the study done by **Lakshmi, K., (2005)** found that post test Knowledge scores had significantly associated with the demographic variables such as sex (6.432) and occupation (4.267).

SEVENTH OBJECTIVE: To find out the association between post test practice scores with their selected demographic variables.

Chi square values were calculated to find out the association between the practice regarding prevention of opportunistic infections among patients with AIDS. Among demographic variables sex (6.422), Duration of illness (5.495) were associated with practice. Other

demographic variables age, marital status, educational status, occupation, and area of residence had no significant association regarding prevention of opportunistic infections.

CHAPTER-VI

SUMMARY, CONCLUSION, IMPLICATION, RECOMMENDATIONS AND LIMITATIONS

This Chapter briefly presents the

Summary of the study

Conclusion

Implications for nursing

Recommendation

Limitation

SUMMARY OF THE STUDY:

The study was done to evaluate the effectiveness of structured teaching programme regarding prevention of opportunistic infections among patients with AIDS in terms of knowledge and practice.

An evaluative study with one group pretest post test, i.e., pre experimental design was used for the study which was conducted at IRT- Perundurai Medical College Hospital. The total sample of the study was 50 patients with AIDS. The Samples were selected by purposive sampling method who met the inclusion criteria. The study was based on wieden Bach's helping art theory was applied to the

study. Review of literature helped the investigator to develop necessary tool. The instrument consists of three parts with demographic variables, structured knowledge questionnaire to assess the knowledge, dichotomous questionnaire to assess the practice.

The study was conducted at IRT- Perundurai Medical College Hospital. AIDS Patients admitted in the ward were included in the study and confidentiality was assured. The investigator gave brief introduction and pretest was conducted for 45 minutes and the structured teaching programme was conducted for 40 minutes using compact disc with television. Post test was done on 7th day. The data collected were analyzed and interpreted using descriptive and inferential statistics. Effectiveness of structured teaching programme was assessed by paired 't' test. Karl Pearson test was used to find out the correlation between knowledge and practice among patients with AIDS. Chi-square test was used to find out the association with knowledge and practice regarding prevention of opportunistic infections among patients with AIDS with their demographic variables. There was an improvement in knowledge, and practice regarding prevention of opportunistic infection.

Finding showed that the structured teaching programme was effective in increasing the knowledge and practice among patients with AIDS regarding prevention of opportunistic infection.

MAJOR FINDINGS OF THE STUDY:

- ❖ Majority of the AIDS patients belongs to the age group of 31-40 years were 36(72%), and 41-50years were 2(4%).
- ❖ Majority of the AIDS patients were females 26(52%), and males were 24 (48%).
- ❖ Majority of the AIDS patients were married 38(76%), 7(14%) were unmarried, and 5(10%) were widow/widower.
- ❖ Majority of AIDS patients 25(50%) were studied up to primary school, 18(36%) were studied up to high school, and 3(6%) were graduates.
- ❖ Majority of AIDS patients 21(42%) self employee, and 12(24%) were private employee, and 15(30%) AIDS patients were coolie worker.
- ❖ Majority of AIDS patients 31(62%) were from urban areas and 19(38%) were from rural areas.
- ❖ Majority of AIDS patients 25 (50%) were had less than 5 years of diagnosis, 14(28%) were diagnosed more than 5 years and 11(22%) of AIDS patients were newly diagnosed.

- Prior to implementation of structured teaching programme 23(46%) had inadequate knowledge and 19(38%) had moderately adequate knowledge and 8(16%) had adequate knowledge. Whereas, after implementation of structured teaching programme 32(64%) had adequate knowledge 15(30%) had moderately adequate knowledge 3(6%) had inadequate knowledge.
- Prior to implementation of structured teaching programme 22(44%) had inadequate practice and 18(36%) had moderately adequate practice and 10(20%) had adequate practice. Whereas, after implementation of structured teaching programme 24(48%) had adequate practice and 20(40%) had moderately adequate practice and 6(12%) had inadequate practice.
- High degree of positive correlation was found between post test knowledge and practice scores ($r=0.87$).
- Significant association was found between the post test knowledge scores with their demographic variables sex (10.326) and duration of illness (3.842).
- Significant association was found between post test practice scores with their demographic variables sex (6.422) and duration of illness (5.495).

CONCLUSION:

The existing knowledge regarding prevention of opportunistic infections among patients with AIDS was inadequate and moderately adequate. The existing practice regarding prevention of opportunistic infection among patients with AIDS was inadequate practice and moderately adequate practice. The structured teaching programme significantly increased their knowledge and practice as evidenced by the t' value of knowledge ('t' value is 13.5), and practice ('t' value is 17.27) regarding prevention of opportunistic infection among patients with AIDS. The study findings revealed that there was a significant improvement in the knowledge of patients with AIDS after structured teaching programme. The provision of structured teaching programme will motivate the patients with AIDS and help them to acquire knowledge and correct practice regarding prevention of opportunistic infection.

NURSING IMPLICATIONS

Nursing service

- ❖ Nurse as educator, leader, counselor, motivator, supervisor and team member in various situation of work.

- ❖ Health education may be given to patients with AIDS regarding meaning, causes, clinical symptoms, drug, diet, exercises and prevention of complication.
- ❖ Health promotion is a vital function of the nurse and nurse can use this structured teaching programme on three levels of prevention (i.e. Primary, Secondary and Tertiary)
- ❖ The result of the study will help the nurses to enlighten their knowledge on importance of health education.

Nursing education

- ❖ Students can utilize the structured teaching programme to give health education to patients with AIDS.
- ❖ The result can be used as an example by the tutor in the class rooms for giving importance to health education.
- ❖ Both the teacher and students can involve themselves in giving health education to patients and their relatives in the practical areas of nursing.

Nursing administration

- ❖ Nurse administrator can formulate policies that will include all nursing staff to be actively involved in health education programme in their respective hospital and colleges.

- ❖ Nursing administrators can utilize the structured teaching programme while conducting in -service education programme for directing and motivating staff towards of prevention of opportunistic infections.
- ❖ Nurse administrators have more responsibility as supervisor on creating awareness among AIDS patients regarding prevention of complications by facilitating free distribution of booklets, handouts, charts regularly to patients in and outpatient department of hospitals, health clinics in urban and rural.

Nursing research

- ❖ This study can be effectively utilized by the emerging researchers for their reference purpose.
- ❖ A similar study could be replicated by taking larger samples.

RECOMMENDATIONS

- ❖ An information booklet can be prepared as a teaching aid in the hospitals and out patient clinics.
- ❖ A similar study can be done with control group.
- ❖ A longitudinal study can be done using post test after one month, six months and one year to see retention of knowledge.
- ❖ A similar study can be done in urban and rural areas so findings can be compared.
- ❖ Similar study can be replicated with large sample.

LIMITATION

- ❖ It was time consuming since the levels of understanding of the patients were different.

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APPENDIX-A

IRT - PERUNDURAI MEDICAL COLLEGE

PERUNDURAI SANATORIUM - 638 053. Erode District, Tamil Nadu.

Dean Personal : 04294 - 220915 Additional Director Personal : 04294 - 225222

Phone : Office : 04294 - 220910 to 220913 Fax : 04294 - 220226 Email: pmc@erd.tn.nic.in

Lr.No. 116 /E9/IRT-PMC/2007

Date : 18.07.2009

TO

The Principal,
BISHOP'S College of Nursing,
CSI Mission Compound,
Dharapuram 638 656.

Sir,

Sub: IRT-PMCH - Permission grant to undergo project work - Reg.
Ref: Your letter dated 02.07.2009.

With reference to the above, II MSC (Nursing) students of your college are permitted to do project work at IRT-Perundurai Medical College Hospital.

In this regard you are requested to remit the fee as given below:

1. Upto 3 months period : Rs.2500/- (Rupees two thousand five hundred only per student).
2. More than 3 months : Additional Rs.500/- for every additional month.

Name of the student :-

1. Ms. Sudha Priya
2. Mrs. Angelin Mary Sheela

Copy to :

1. The Deputy Superintendent PMCH
2. The Medical Superintendent, RTS
3. The Resident Medical Officer, PMCH
4. HOD of Pulmonology
5. Dr. Mohankumar, Asst. Professor of Skin & STD-Through HOD PMCH
6. The Accounts Officer
7. File.

APPENDIX-B

LETTER SEEKING EXPERT'S OPINION FOR VALIDITY OF THE QUESTIONNAIRE

From

Ms.S. SUDHA PRIYA
M.Sc., Nursing II year,
Bishop's college of Nursing,
Dharapuram.

To

Respected Madam,

Sub : Requisition for content validity of tool.

I am M.Sc(nursing)., second year student of Bishop's college of Nursing ,Dharapuram. Under Dr.M.G.R. Medical University, Chennai. As a partial fulfillment of my M.Sc., (N) Degree Programme. I am conducting a research study on "A Study to evaluate the effectiveness of structured teaching programme regarding prevention of opportunistic infections in terms of knowledge and practice among patients with AIDS". I have developed a questionnaire to assess the effectiveness of structured teaching programme on knowledge and practice regarding prevention of opportunistic infections among patients with AIDS . I am sending the tool for content validity and for your expert and valuable opinion.

I will be very thankful to return it to the undersigned.

Thank you,

Yours sincerely,
(Ms.Sudhapriya)

Encl:

1. Certificate of content validity.
2. Statement of problem, objectives, operational definitions.
3. Description of the tool and tool for data collection.
4. Self addressed envelop.

APPENDIX- C

LIST OF EXPERTS FOR VALIDITY OF THE TOOL

- 1 Mrs. Victorial selvakumari, M.Sc(N),**
Assistant Professor,
Department of Medical Surgical Nursing,
Sara College of nursing.
Dharapuram.
- 2. Mrs.Jeya Thanga Selvi, M.Sc (N).,**
Reader,
Jeyaraj Annabackiam College of Nursing,
Madurai.
- 3 Mrs.Vanmathi M.sc (N).,**
Principal,
Gayathri Educational Academy,
Bangalore-91.
- 4. Mrs.R.Nirmala M.sc(N).,**
Associate Professor,
Vinayaka Missions Annapoorna College of Nursing,
Chinna Seeragapadi,
Salem-636308.
- 5. Mr.Mohan kumar M.B.B.S.,**
HOD-Skin and Sexualy transmitted disease,
IRT- Perundurai Medical College Hospital
Perundurai, Erode .

APPENDIX- -F

**STRUCTURED TEACHING PROGRAMME ON PREVENTION
OF OPPORTUNISTIC INFECTION**

Topic	:	Prevention of opportunistic infections
Group	:	AIDS patients admitted in Perundurai medical college hospital.
Place	:	Perundurai medical college hospital
Instructor	:	S. Sudha Priya
Medium of instruction	:	Tamil
Method of teaching	:	Lecture
Teaching aids	:	Compact disc with television.

General objective:-

The patients will be able to gain knowledge about prevention of opportunistic infections and develop a desired attitude and skills in practicing in their day today activities and improve their quality of life.



Specific objective:--


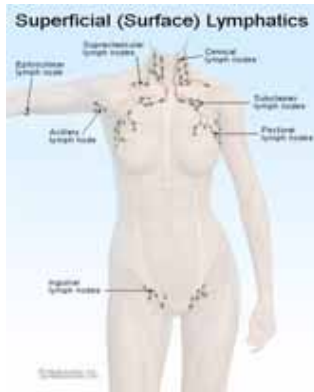
The patient will be able to


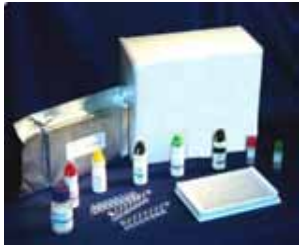

- ❖ define AIDS.
- ❖ enlist the modes of transmission.
- ❖ enumerate signs/symptoms of AIDS.
- ❖ explain the diagnostic evaluations.
- ❖ define opportunistic infections.
- ❖ enlist types and signs/symptoms of opportunistic infections .
- ❖ enumerate the complications of opportunistic infections.

- ❖ explain the dietary measures to prevent opportunistic infections.
- ❖ explain the personal hygiene measures to prevent opportunistic infections.
- ❖ explain the exercise and physical activity.
- ❖ explain sleep and rest to prevent opportunistic infections.
- ❖ explain about medications.
- ❖ explain the general preventive measures to prevent opportunistic infections.
- ❖ explain about follow up.

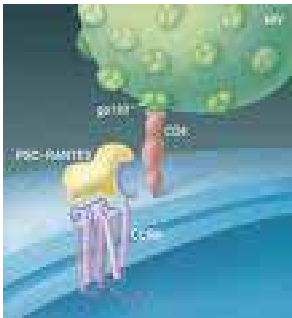
Specific objective	Content	AV Aids	Teacher's activity
define AIDS	<p>STRUCTURED TEACHING PROGRAMME ON PREVENTION OF OPPORTUNISTIC INFECTION INTRODUCTION</p> <p>Human immuno deficiency virus infection is one of the pandemic disease in the world , especially in India it reaches the highest morbidity and mortality and is mainly due to the development of opportunistic infection, thus it need to be considered as a major health problems.</p> <p>ACQUIRED IMMUNO DEFICIENCY SYNDROME (AIDS)</p> <p>Acquired immunodeficiency syndrome is defined as the most severe form of a continuum of illness associated with human immunodeficiency virus (HIV) infection.</p> <p>-BRUNNER - (2001)</p>	Lecturer with compact disc	Post test will be conducted on 6 th day

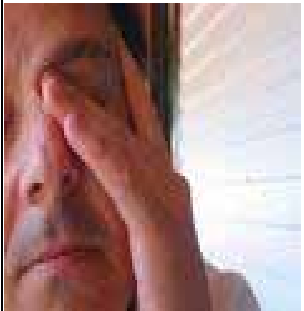
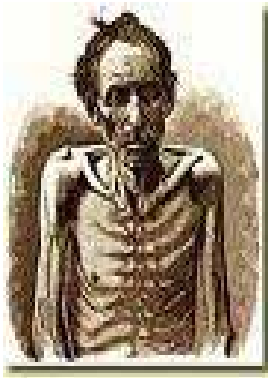
Specific objective	Content	AV Aids	Teacher's activity
<p>enlist the modes of transmission</p> <p>enumerate the signs/symptoms of AIDS</p>	<p>MODES OF TRANSMISSION :-</p> <ul style="list-style-type: none"> • Sexual contact with an HIV infected person. • Transfer of HIV infected mother to child • An accidental prick from an HIV contaminated needle. • A blood transfusion with HIV – infected blood <p>SIGNS/ SYMPTOMS</p> <p>Early symptoms :-</p> <p>Early symptoms may appear a 2-3 month after becoming infected. They may last for a couple of weeks which include.</p> <ul style="list-style-type: none"> • Rapid weight loss • Dry cough • Sore throat • Recurring fever • Night sweats • Extreme unexplained fatigue • Swollen lymph nodes in axilla, neck and groin 	 	



Specific objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> • White spots on the tongue (or) in the mouth (or) throat • Head ache • Rashes • Depression • Irritable mood • Memory loss (or) other neurological disorders <p>Late symptoms :-</p> <p>After these initial symptoms passes, there may be no symptoms for month to years. Then the following symptoms may occur over the course of 1-3 yrs.</p> <ul style="list-style-type: none"> • Swollen lymph glands all over the body • Fungal infections of the mouth, fingernails, toes • Repeated vaginal infection • Development of warts • Exacerbation of prior condition, Such as eczema, herpes infection. 	  <p>The diagram, titled 'Superficial (Surface) Lymphatics', shows a human figure with various lymph nodes labeled: Submental lymph node, Submandibular lymph node, Cervical lymph nodes, Axillary lymph node, Inguinal lymph node, and Thoracic lymph nodes.</p>	



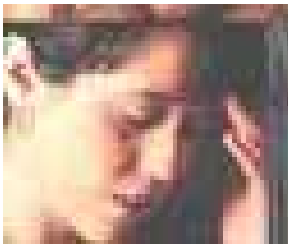
Specific objective	Content	AV Aids	Teacher's activity
explain the diagnostic evaluations	<ul style="list-style-type: none"> • Weight loss • Chronic diarrhea • running nose • cough <p>DIAGNOSTIC EVALUATIONS: HIV ANTIBODY TEST: i). ENZYME LINKED IMMUNOSORBENT ASSAY (ELISA) ELISA test identifies antibodies directed specifically against HIV. The ELISA test does not establish a diagnosis of AIDS. It shows that the person has been exposed to (or) infected with HIV. It can be done after 14 months of initial symptoms.</p> <p>If recent risk is found encourage to retest at 3 weeks, 6 weeks and 3 months. If ELISA is positive then confirmative test, western blot is done.</p> <p>ii.) WESTERN BLOT Western blot testing uses purified HIV Antigens electrophoresed on gels. These are incubated with serum samples. If any antibody in the serum is present, it can be detected.</p>	  	




Specific objective	Content	AV Aids	Teacher's activity
	<p>It should be done after patient is said to seropositive, people whose blood contains antibodies for HIV are seropositive. It is the confirmatory test.</p> <p>ii) CD4 TEST</p> <p>CD4 cells are immune cells. Total number of CD4 cell count is 800 - 1200 cell/ μ l are considered to be normal. In HIV patient it is less than 200 cell/ μ l</p> <p>iv) IMMUNO FLUORESCENCE ASSAY (IFA)</p> <p>Immuno fluorescence assay is used identify HIV infected cells. Blood is treated with a fluorescent antibody against P17(or) P24 antigen and then examined using a fluorescent microscope.</p> <p>P24 is a capsid (or) viral core protein. It is used to help diagnose early HIV infection. The levels of P24 antigens increased significantly at about 1 – 3 weeks after initial infection.. It is during this time frame before</p>		



Specific objective	Content	AV Aids	Teacher's activity
<p>Define the opportunistic infection</p> <p>enlist types and signs/symptoms of opportunistic infections</p>	<p>HIV antibody is produced.(Antibodies produced after 2-8 weeks of exposure)</p> <p>A positive results means that the patient is infected with HIV , where as negative results may mean that patient is not infected with HIV. If all three tests are positive then the patient is HIV positive. If not confirmed retest after 3 months</p> <p>.</p> <p>OPPORTUNISTIC INFECTIONS</p> <p>An infection caused by various organ such as fungi and bacteria that occurs due to immune system impairment.</p> <p>COMMON OPPORTUNISTIC INFECTIONS</p> <p>I. BACTERIAL DISEASES:-</p> <p>a) Lung infections (Mycobacterium Tuberculosis)</p> <p>b) Gastro intestinal system (From oral cavity till gastro intestinal tract)- Gastro enteritis</p> <ul style="list-style-type: none"> ○ pain in chest ○ Coughing up of blood (or) sputum. ○ Fatigue, ○ weight loss, ○ loss of appetite, ○ chills, 		

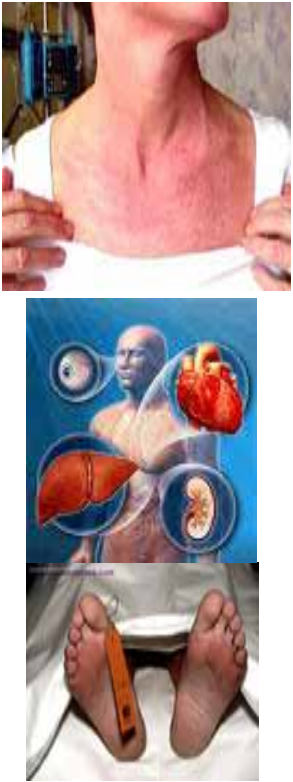
Specific objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> ○ fever ○ Night sweats. ○ Anemia ,oral ulcers, ○ Swollen glands ○ Abdominal pain ○ Diarrhea ○ Vomiting ○ Increased heart rate ○ Increased respiratory rate <p>II. FUNGAL DISEASES</p> <ul style="list-style-type: none"> a. Lungs – pneumocystis carinii pneumonia b. Oral thrush c. White patches on skin d. Central nervous system – meningitis <p>SIGNS AND SYMPTOMS</p> <ul style="list-style-type: none"> ▪ Dyspnea ▪ Cough ▪ Fever ▪ Chills ▪ Profuse sweating ▪ Progressive profound fatigue ▪ Cyanosis • White patches on tongue, Palate. It cannot be wiped, if so it 	 	




Specific objective	Content	AV Aids	Teacher's activity
	<p>will bleed.</p> <ul style="list-style-type: none"> • White discharge from vagina • Itches and irritates the vagina and surrounding outer tissue • Burning urination • Fever • Skin lesions - white patches • Mental irritation, and convulsion <p>III. VIRAL DISEASES</p> <ol style="list-style-type: none"> a. Skin cancer (Kaposi's sarcoma) b. Shingles (varicella zoster) c. Retinal necrosis – loss of vision d. Central nervous system (CNS) – meningitis , dementia e. Hepatitis – B infection – jaundice f. Herpes simplex infections - skin ulcers g. Influenza – fever 	 	



Specific objective	Content	AV Aids	Teacher's activity
	<p>SIGNS AND SYMPTOMS</p> <ul style="list-style-type: none"> • High fever • Chills • Flu like syndrome • Swollen lymph glands • Fatigue • Skin ulcers • Dry itching skin • Jaundice • Dementia • Loss of vision <p>IV. PROTOZOAL DISEASES :-</p> <p>a. Toxoplasmosis – encephalitis</p> <p>b. Peripheral neuropathy</p> <p>SIGNS AND SYMPTOMS</p> <ul style="list-style-type: none"> • Severe head ache 	  	

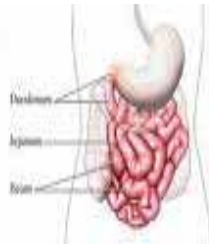
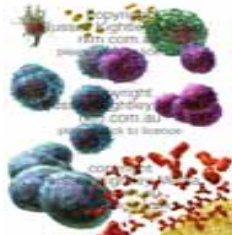
Specific objective	Content	AV Aids	Teacher's activity
enumerate the complications of opportunistic infections	<ul style="list-style-type: none"> • Fever • Confusion • Mental irritability • Difficulty in walking • Numbness in the extremities • Convulsion • Coma • Muscle wasting <p>COMPLICATIONS OF OPPURTUNISTIC INFECTIONS:</p> <p>RESPIRATORY SYSTEM:</p> <ul style="list-style-type: none"> • Respiratory failure. <p>INTEGUMENTARY SYSTEM:</p> <ul style="list-style-type: none"> • Skin ulcer • Skin cancer <p>GASTRO INTESTINAL TRACT:</p>	  	

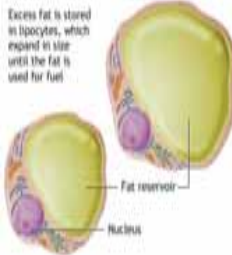
Specific Objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> • Gastro enteritis • Cancer • Chronic diarrhea • Weight loss <p>NEUROLOGICAL SYMTEM</p> <ul style="list-style-type: none"> • Meningitis • Encephalitis • Convulsions • Dementia • Coma <p>MALIGNANCIES</p> <ul style="list-style-type: none"> ○ Organs affected due to malignancies: ○ Skin ○ Lung ○ Lymph nodes ○ Vertebrae ○ Stomach Pancreas 	 	


Specific Objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> ○ Rectum ○ Bladder <p>SIGNS AND SYMPTOMS</p> <ul style="list-style-type: none"> ○ Red purple patches over skin, mucus membrane ○ Scaly dark brown skin ○ Enlarged lymph nodes in neck and groin Weight loss ○ Bone pain ○ Bleeding per rectum ○ Hematuria ○ Blood stained sputum ○ Abdominal distension ○ Abdominal pain. <p>LATE COMPLICATIONS:</p> <ul style="list-style-type: none"> Organ failure Death 		




Specific Objective	Content	AV Aids	Teacher's activity
<p>explain the dietary measures to prevent opportunistic infections</p>	<p>PREVENTIVE MEASURES :-</p> <p>DIETARY MEASURES :-</p> <p>Good nutrition is important in prevention of opportunistic infection.</p> <p>Importance of diet :-</p> <ul style="list-style-type: none"> • Strengthens the immune system • Reduce the side effects of drug • Reduce the symptoms of opportunistic infections • Prevent muscle wasting • Prevent food borne infections <p>CALORIE :-</p> <p>HIV patient need high energy (calorie) than normal person about (+500) 2900 kcal/day</p>	  	




Specific Objective	Content	AV Aids	Teacher's activity
	<p>CARBOHYDRATES :-</p> <p>Carbohydrates are simple sugars which provide energy for doing work, essential for oxidation of fat.</p> <p>A recommended allowance of carbohydrate is 100- 150 gm daily.</p> <p>Carbohydrate rich foods are wheat, Rice, jowar, maize, millets, Roots and tubers, potato, carrot, tapioca and sweet potato and beet root.</p> <p>PROTEINS :-</p> <p>Proteins are the building blocks of muscles, organ, and substance that make up body's immune system.</p>	 	



Specific Objective	Content	AV Aids	Teacher's activity
	<p>Proteins prevent the muscle wasting in AIDS patients</p> <p>Recommended allowance of proteins is 1.2 – 2.0 gm/kg/body weight.</p> <p>Protein rich foods are pulses like bengal gram, black gram, legumes like green gram, peas, beans, horse gram, soya beans.</p> <p>Other rich sources are milk, meat, chicken, egg and fish</p> <p>FAT :-</p> <p>Fat is the body's major source of energy storage, essential for absorption of vitamins A,D, E and K.</p> <p>Recommended allowance 25% of total calorie intake.</p>	 	




Specific Objective	Content	AV Aids	Teacher's activity
	<p>Fat rich foods are nuts, such as ground nut, coconut, badam, cashew nuts , butter , Ghee, egg-yellow, liver, chicken and fatty meat, more over oils like, groundnut oil, coconut oil, sunflower oil. Use preferably 3 tsp of oil/ day.</p> <p>FRUITS AND VEGETABLES</p> <p>Fruits and vegetables are doing vital functions on immune system of the AIDS patient because it contains more vitamins and minerals.</p> <p>Amla (gooseberry), lime, Guava, grapes, mango, orange. tomato contains Vitamin - C which is helpful for formation of collagen, helps in good absorption of Iron.</p> <p>Apple, pomegranate contains more iron. It is helpful for the formation of red blood cells and prevents anemia.</p>		




Specific Objective	Content	AV Aids	Teacher's activity
	<p>Jack fruit, papaya contains more carotene which is essential for vision.</p> <p>Vegetables :</p> <p>Vegetables contain minerals, vitamins and fibers.</p> <p>Bitter guard contains rich carotene and ascorbic acid.</p> <p>Drumstick leaves, Amaranth and Agathi contain rich iron.</p> <p>Add more vegetables in the diet such as cabbage, cauliflower, coriander, spinach, brinjal, cucumber, drumstick, bitter guard, white pumpkin, and red pumpkin.</p> <p>FIBER;</p> <ul style="list-style-type: none"> ○ Fiber is part of the plant that is not digested. ○ Helps to control blood cholesterol level. 		




Specific Objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> ○ Absorbs moisture and helps prevent constipation. ○ Daily requirement of dietary fibers is 40 gm/day. <p>Good sources:</p> <p>Wheat bran, grains, oats, vegetables, green leafy vegetables, drumstick, beans, lady's finger, cauliflower and cabbage.</p> <p style="text-align: center;">VITAMINS AND MINERALS</p> <p>Vitamins and minerals are effective in strengthening immune system.</p> <p>Vitamin – A</p> <p>Vitamin - A is essential for good vision, epithelial tissue formation. Rich sources of vitamin - A is carrot, green leafy vegetables, pumpkin, Mango, fish liver oil and cod liver oil.</p>	  	




Specific objective	Content	AV Aids	Teacher's activity
	<p>Vitamin – B 1</p> <p>Vitamin- B1, is essential to maintain the nerves in healthy condition. Rich sources are wheat, millets, peanut and rice,germinated grams.</p> <p>Vitamin- B 6</p> <p>Vitamin- B6 is essential for maintaining the nerves in normal condition. Cereals, legumes, nuts and oil seeds, meat, fish, egg and milk are important sources of vitamin B6.</p> <p>Vitamin - C</p> <p>Vitamin - C is one of the most essential vitamins for HIV patient because of the well known antioxidant and wound healing.</p>	  	




Specific objective	Content	AV Aids	Teacher's activity
	<p>It is effective in cleaning out cell and tissue damaging particles, rich sources of vitamin - C is citrus fruits like lime, orange, pineapple, and tomato.</p> <p>Vitamins – D :-</p> <p>Purposes :-</p> <ul style="list-style-type: none"> • It promotes the absorption of minerals such as calcium and phosphorus from small intestines. • Promotes calcification on the bones <p>Recommended daily allowance of vitamins – D is 10 μg Sources are fish liver oil. Its natural distribution is limited to small amounts in fish oils, eggs, butter., ghee, milk, and milk powder. Sun light is helpful for formation of vitamin –D.</p>	 	



Specific objective	Content	AV Aids	Teacher's activity
	<p>Zinc</p> <p>Numerous aspect of cellular metabolism is zinc dependent. Zinc plays important role in the immune response and neurological function.</p> <p>Recommended daily allowance of zinc is 11 mg/day which is rich in grains and legumes.</p> <p>Garlic and turmeric should be added into food items to boost the immune system.</p> <p>Drink plenty of water especially boiled cool water at least 4 cup/8 glasses a day.</p> <p>FOODS TO BE LIMITED</p> <ul style="list-style-type: none"> ➤ Excessive sugars, especially refined sugar when taken in large amount sugars are stored as fat in the body,it can lead to heart disease ➤ Excessive intake of fat and oil will increase cholesterol level in the body it leads to heart disease. 	  	



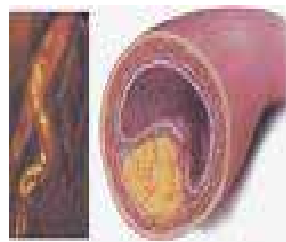
Specific objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> ○ Intake of drinks like coffee must be limited as they affect appetite, ○ Avoid fried foods, and salted packed foods. <p>MEASURES TO FOLLOW:</p> <ul style="list-style-type: none"> • Take food and fluids warm • Take small and frequent meals (4-6 meals/day) • Limit snacks • Take easily chewable and digestible foods. • Wash hands thoroughly before handling, preparing and eating foods. • Wash the vegetables before cooking. • Use clean, safe water for food preparation • Keep the food and drinking water covered and stored away from insects, flies and rats • Meat, poultry, fish should be well cooked. 	  	




Specific objective	Content	AV Aids	Teacher's activity
<p>Explain the personal hygiene measures to prevent opportunistic infections</p>	<p>Be careful enough to avoid injury and contamination while cutting vegetables, meat, chicken and fish,</p> <p>Use boiled and cooled water to drink.</p> <p>PERSONAL HYGIENE MEASURES :-</p> <ul style="list-style-type: none"> • Brush the teeth morning and before going to bed. • Use separate and soft brushes • Rinse the mouth after eating to remove the food particles • Gargles with water adding salt to it. • Avoid crowdy areas • Use mask (or) hand kerchief while going out <p>Wash hands thoroughly after :</p> <ul style="list-style-type: none"> ❖ Toileting ❖ Handling garbages 	  	


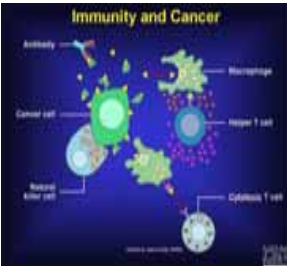
Specific objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> ❖ Cleaning house ❖ Handling meat ❖ Contact with pet animal ❖ Gardening <ul style="list-style-type: none"> • Trim the nails. • Be careful enough while working with sharp objects. • Bathe twice a day with antiseptic soap like dettol soap • Use mild soap, avoid detergent soaps for bathing. • Use hot water for bathing. • Concentrate more over natural orifices and skin folds, in between the fingers and toes. • After bathing and before going to bed, apply a skin lotion to arms and legs to moisturize the skin. • Take head bath twice a week with hot water and shampoo 	  	



<p>explain the exercise and physical activity,</p>	<ul style="list-style-type: none"> • Use own towel, clothes and soaps. • Use loose clothing to prevent moisture • Use separate clothing, clothes should be washed with detergent soap. • Clothing should be soaked in antiseptic solutions (dettol) and then dried in sunlight . • Remove the stain using bleaching powder. <p>EXERCISE AND PHYSICAL ACTIVITY :-</p> <p>AIDS have a unique relationship to responsiveness and exercise. It boosts the immune system and increase the T-Lymphocytes.</p> <p>Benefits of exercise :-</p> <ul style="list-style-type: none"> • Increase muscle mass • Reduce stress • Boost the immune system • Regulate sleep pattern • Enhance self image 	  	
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Specific objective	Content	AV Aids	Teacher's activity
	<ul style="list-style-type: none"> • Increase appetite • Increase the bone strength <p>TYPES OF EXERCISE :-</p> <p>Anaerobic exercise :-</p> <p>Exercise (or) resistance training schedule includes activities such as weight lifting, which is more beneficial for increasing muscle strength.</p> <p>Aerobic exercise;-</p> <p>Brisk physical activity that requires the heart and lungs to work stronger to meet the body's increased oxygen demand. Aerobic exercise promotes the circulation of oxygen through the blood. E.g. Running, swimming and cycling, walking, limb stretching, playing shuttle coke, and tennis.</p>	 	

Specific objective	Content	AV Aids	Teacher's activity
	<p>Benefits of aerobic exercise:</p> <p>Physical benefit</p> <ul style="list-style-type: none"> ▪ Increase aerobic ability ▪ Increase oxygen consumption ▪ Lowering blood pressure ▪ Reduce proportion of body fat. <p>Mental benefit</p> <ul style="list-style-type: none"> ▪ Reduces anxiety ▪ Helps to improve self concept. <p>Combination of both types of exercise is best. Participating in lower impact aerobic activities such as walking can help to receive benefits without burning excess calories</p> <p>Some exercise tips :-</p> <ul style="list-style-type: none"> • Exercise slowly, continuously and repeatedly • Beware of over exercise, warning signs include fatigue palpitations, giddiness and increased nauseated. • Perform warm – up exercises before regular exercise. 	  	

Specific objective	Content	AV Aids	Teacher's activity
	<p>REST AND SLEEP :-</p> <p>Sleep can play an important role in helping people to recover from illness including HIV - sleep problems can also cause fatigue.</p> <p>Benefits :-</p> <ul style="list-style-type: none"> ➤ Reducing the stress. ➤ Relaxing the mind. ➤ Promote freshness. ➤ Removes fatigue . <p>Measures for good sleep :-</p> <p>Go to bed at the same time and getup at the same time every day</p> <ul style="list-style-type: none"> ➤ If you can't go to sleep after 30 min get up and do something relaxing until you feel sleepy. (Reading books, watching television). ➤ Avoid heavy meals and sugary drinks before bedtime. ➤ Sleep at least 8 hours per day. ➤ Schedule the activities with Rest. ➤ Drink a cup of milk before going to bed 	  	

Specific objective	Content	AV Aids	Teacher's activity
explain about medications.	<p>MEDICATIONS :-</p> <p>Medications are given as</p> <ul style="list-style-type: none"> ▪ Supplement like vitamins. ▪ Antiretroviral drugs <p>Purpose of taking medications</p> <ul style="list-style-type: none"> • To reduce the viral load • To prevent complication • To prevent and treat opportunistic infections 	 	

Specific objective	Content	AV Aids	Teacher's activity
<p>explain the general preventive measures to prevent opportunistic infections.</p>	<p>Precautions</p> <ul style="list-style-type: none"> ➤ Should know that what medication you are taking and how to take them with food or in empty stomach. ➤ Take full dose prescribed and take it as scheduled. ➤ Medications should be taken regularly ➤ Do not take any new drug without prescription. <p>GENERAL PREVENTIVE MEASURES;</p> <ul style="list-style-type: none"> ❖ Avoid foods sold in unsanitary conditions (or) prepared by workers with poor personal hygiene. ❖ Check the weight periodically ❖ Mop the floor with antiseptic solution at least twice a week ❖ Clean the floor with bleaching water if it has contaminated with vomits (or) body fluids 	 	

Specific objective	Content	AV Aids	Teacher's activity
Explain about follow up	<ul style="list-style-type: none"> ❖ Keep the home environment clean ❖ Keep the toilet clean and closed ❖ If patient has diarrhea (or) vomitus replace the fluids especially through ORS <p>FOLLOW UP :-</p> <ul style="list-style-type: none"> ❖ To care and provide support activities. ❖ To monitor health indicators. ❖ For Counseling ❖ To Rule out the complications. ❖ For serological examination ❖ Serological examination <p>Serological examination should be done every 3 month interval to find the white blood cells count.</p> <p>Conclusion</p> <p>This teaching will help the HIV patients to prevent them from opportunistic infections and improve their quality of life.</p>	  	

Re;jh;g;g epiy njhw;W Neha; jLg;G Kiwf;fhd fl;likg;G gapw;rpj;jpl;lk;

KfTiu :-

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jhf;fg;gLfpwJ.

- va;l;]; Nehahy; ghjpf;fg;gl;l NehahspAld; cwT nfhs;Sjy;
- va;l;]; Nehahy; ghjpf;fg;gl;l jha;lkpUe;J Foe;ijf;F guTjy;
- jw;nrayhf va;l;]; Nehahspf;F gad;gLj;jpa Crpiag; gad;gLj;Jjy;.
- va;l;]; Neha;f; fpUkpfs; cs;s ,uj;jj;ijr; nrYj;Jjy;

milahsk;/ mwpFwpfs; :-

Muk;gfhy mwpFwpfs; :-

Muk;gfhy mwpFwpfs; Neha;j; njhw;W Vw;g;gl;l ,uz;L %d;W
khjq;fspy; Njhd;wp> ,uz;L thuq;fSf;Fj; njhlUk;.

- cly; vil tpiuthf Fiwjy;
- twl;rpahd ,Uky;
- njhz;ilg;Gz;
- njhlh;r;rpahd fha;r;ry;
- ,utpy; tpah;j;jy;
- mjpgf fisg;G
- fOj;J> ,Lg;G %l;Lfspy; typ> tPf;fk;.
- ehf;fpy; nts;isg; Gs;spfs; Njhd;Wjy;
- jiytyp

- Njhypy; rpwpa rpwg;Gg; Gs;spfs; Njhd;Wjy;
- kd mOj;jk;
- vhpr;ry;
- Qhgf kwjp - euk;G rk;ge;jkhd FiwghLfs;
- kdr;Nrhh;T
- vhpr;ryhd kdepiy
- epidthw;wy; FiwT kw;Wk; euk;Gj;jsh;r;rp; NfhshWfs;

jhkjkhgdgpd; mwpFwpfs; (Late symptoms) :-

Muk;gfhy mwpFwpfSf;Fg;gpd; tUlf;fzf;fpy; khjf;fzf;fpy; ve;j
mwpFwpfSk; ,Uf;fhJ. 1 - 3 tUlq;fSf;Fg;gpd; fPo;f;fhZk; mwpFwpfs;
Njhd;Wk;.

- cly; KOtJk; epzePh;r; Rug;gpfspy; tPf;fk;.
- tha; tpuy;fs; fl;iltpuy; Mfpatw;wpy; Njky;.
- mbf;fb gpwg;G cWg;gpy; njhw;Wjy;. ghYz;zp kU tsh;r;rp
- nrhwp njhw;W> Kd;gpUe;jij tpl mjpfhpj;jy;
- cly; vil Fiwjy;
- fLikahd tapw;Wg; Nghf;F
- %f;fpy; ePh; tbjy;
- ,Uky;.

tpahjp eph;zak; kpg;jpg;gP :-

vr;. I. tp. vjph; caphp (antibody) Nrhjid :-

viyrh Nrhjid vr;.I.tp.apd; vjph; caphpia mwpAk; NrhjidahFk;. viyrh
Nrhjidahy; va;l;]; eph;zaj;ij epWt KbahJ. vr;.I.tp. njhw;W xUtUf;F
Vw;gl;Ls;sJ vd;gijj; njhptpf;Fk;. Muk;g mwpFwpfs; Vw;gl;l 14 khjq;fSf;Fg;
gpwF nra;ag;gLk;.

Muk;g fhy vr;.I.tp. mghak; fhzg;gl;l gpd; kW Nrhjid %d;W> kw;Wk;
MW thuq;fs; kw;Wk; %d;W khjq;fspy; nra;ag;glyhk;. viyrh Nrhjidapy;

epr;rakhd ghjpg;G cs;snjd;W fhzg;gl;lhy; mij cWjp nra;a nt];lh;d; gpshl;
(Western blot) Nrhjid nra;ag;gl Ntz;Lk;.

nt];lh;d; gpshl; Nrhjid Rj;jpfhpf;fg;gl;L n[y;ypy; ghJfhg;ghf itf;fg;gl;l vr;.l.tp.
ia cgNahfpj;Jr; nra;ag;gLfpwJ. mitfs; rPuj;jpy; (Serum) chpa ntg;g
epiyapy; itf;fg;gl;Ls;s rhk;gps;fs; MFk;. rPuj;jpy; fhzg;gLk; vjph; caphp
fz;Lgpbpf;fg;gLk;. ,e;epiy];Nuhghrpl;bt; vdg;gLk;. Vnddpy; ,it vr;.l.tp.apd;
vjph; caphpia nfhz;ljhFk;. ,JNt vr;.l.tp.ia eph;zapf;Fk; NrhjidahFk;.

1. rpb 4 Nrhjid (CD 4 Test) :-

rpb 4 nry;fs; vjph;g;Gr;rf;jp nry;fshFk;. nkhj;j rpb 4 nry;fspd;
vz;zpf;ifahdJ 800 - 1200 nry;fs;/ikf;Nuh ypl;lh;. vr;. l. tp Nehahspfspd;
clypy; 200 nry;fs;/ ikf;Nuh ypl;INu ,Uf;Fk;.

2. ,k;KNdh/g;Surz;l mNr (IFA) :-

,k;KNdh/g;Surz;l; mNr vr;.l.tp.apdh; ghjpf;fg;gl;l nry;fis mwpa
cjTfpwJ. ,uj;jkhdJ> /g;Surz;l; vjpH caphpapdh; (P17 (or) P 24)
epug;gg;gl;L gpd;dh; Ez;Nzhf;fpapdh; Ma;T nra;ag;gLfpwJ.

P 24 vd;gJ itu]pd; ika Gujk; MFk;. ,it vr;.l.tp njhw;wpid ,sepiyapNyNa
mwpa cjTfpwJ. P 24 ika GujkhdJ Kjy; 1 - 3 thuq;fspNyNa mjpfkfhf
,uj;jj;jpy; fhzg;gLfpwJ. ,r;Nrhjidapy; P 24 ikaGujk; mjpfkfhf fhzg;gbd;
mk;kdpjh; vr;.l.tpahy; ghjpf;fg;gl;ltuhth;.

Nkw;\$hpa midj;j ghpNrhjidfSk; ghrpbt; vd;why; mk;kdpjh; vr;.l.tpahy;
ghjpf;fg;gl;lth;> ,y;iynadpy; ,Nj ghpNrhjidia 3 khjq;fSf;F gpwF nra;a
Ntz;Lk;.

re;jh;g;g epiy njhw;W Neha; :-

clypy; vjph;g;Gj; jd;ik Fiwtjhy; G+Q;ir kw;Wk; ghf;Bhpahtpdhy;
Vw;gLk; njhw;WNeNa re;jh;g;gepiy njhw;W Neha; MFk;.

nghJthd re;jh;g;g epiy njhw;W :-

- i. **Ghf;Bhpahtpdhy; Vw;gLk; njhw;WNeNa;.**
- ii. Eiuapuy; njhw;WNeNa; (ikf;Nfh ghf;Bhpak;> fhrNeha;)
- iii. czT kz;lyk; (tha; Kjy;> kytha; tiu) tapw;Wg;Nghf;F.

mwpFwpfs; :-

- ❖ neQ;R typ
- ❖ ,uj;jk; kw;Wk; rypAld; \$ba ,Uky;
- ❖ Nrhh;T
- ❖ vil Fiwjy;
- ❖ Fsph;
- ❖ fha;r;ry;
- ❖ ,uT Neuq;fsy; tpah;j;jy;
- ❖ ,uj;j Nrhi> tha;Gz;
- ❖ tapw;Wtyp
- ❖ tapw;Wg;Nghf;F
- ❖ the;jp
- ❖ ,UjaJbg;G mjpfhj;jy;
- ❖ Rthr vz;zpf;if mjpfhj;jy;

II. G+Q;irfspd; njhw;WNeNa; :-

ghjpf;fg;gLk; cWg;Gfs; :-

- ❖ Eiuapuy;
- ❖ tha; - G+Q;ir njhw;W
- ❖ Njhy; - nts;isg;gil
- ❖ euk;G kz;lyk;

mwpFwpfs; :-

- ❖ %r;Rj;jpzw;wy;
- ❖ ,Uky;
- ❖ fha;r;ry;
- ❖ Fsph;
- ❖ mjpfkfhf tpah;j;jy;
- ❖ tpuy;fs; ,sePy epwkhf khWjy;
- ❖ ehf;F kw;Wk; md;dj;jpy; nts;is epw gil mtw;iw mfw;Wk; nghJ ,uj;jk; frpAk;.
- ❖ nts;isg;gLjy;
- ❖ Njhy; mhpg;G
- ❖ rpWePh; ntspNaWk; nghOJ fLfLg;G
- ❖ fha;r;ry;
- ❖ Njhy; gil
- ❖ kd vhpr;ry;

III. itu]; njhw;W Neha; :-

- ❖ Njhy; Gw;WNeha;
- ❖ tpopj;jpiu ghjpg;G
- ❖ fz;ghh;it ,oj;jy;
- ❖ euk;G kz;lyk; %is ciwapy; njhw;WNeha;
- ❖ kQ;rs; fhkhiy
- ❖ Njhy; Gz;
- ❖ ,d;/g;Sad;]h fha;r;ry;

mwpFwpfs; :-

- ❖ mjpgf fha;r;ry;
- ❖ Fsph;
- ❖ epzePh; Kbr;Rfspd; tPf;fk;
- ❖ Nrhh;T
- ❖ Njhy; Gz;

- ❖ Njhy; mhpg;G

- ❖ kQ;rs; fhkhiy
- ❖ fz;ghh;it ,oj;jy;

IV. GNuhl;NlhNrh njhw;W Neha; :-

- ❖ %is njhw;WNeha;
- ❖ euk;G kz;lyk; nraypoj;jy;

mwpFwpfs; :-

- ❖ mjpgf jiytyp
- ❖ fha;r;ry;
- ❖ Fog;gk;
- ❖ kd vhpr;ry;
- ❖ jsh;e;j eil
- ❖ typg;G
- ❖ czh;rpaw;w epiy
- ❖ jir rpijT

gpd; tpisTfs; :-

EiuaPuy; kz;lyk; :-

Rthrk; epd;W tpLjy;

Njhy; :-

- ❖ Njhy; Gz;
- ❖ Njhy; Gw;WNeha;

czT kz;lyk; :-

- ❖ tapw;W cghij
- ❖ jPuhj tapw;W Nghf;F
- ❖ vil Fiwjy;

euk;G kz;lyk; :-

- ❖ %is ciw njhw;WNeha;

- ❖ %isj; njhw;WNeHa;
- ❖ typg;G
- ❖ czh;rpaw;w epiy

Gw;W NeHa; :-

ghjpf;fg;gLk; cWg;Gfs; :-

- ❖ Njhy;
- ❖ EiuaPuy;
- ❖ epzePh; kz;lyk;
- ❖ KJnfOk;G
- ❖ ,iug;ig
- ❖ rpWePh;ig
- ❖ kytha;

mwpFwpfs; :-

- ❖ ,sr;rptg;G epwgil Kf;fpakhf Njhy; kw;Wk; nkd; nry;fs; Nky;
Njhd;Wjy;.
- ❖ gOg;G epw Njhy; chpjy;
- ❖ vYk;G typ
- ❖ kythapy; ,uj;jk; frpjy;
- ❖ ,uj;jk; fye;j rpWePh;
- ❖ ,uj;jk; fye;j Nfhio
- ❖ tapW tPf;fk;
- ❖ tapW typ

,Wjp gpd; tpisT :-

- ❖ cWg;Gfs; ghjpg;G
- ❖ kuzk;

jLg;G eltb;ffs; :-

czTf;fl;Lg;ghL tptuq;fs; :-

Neha;j;jLg;gjw;F rj;Js;s czT cl;nfhs;StJ kpfTk; Kf;fpakhdjhFk;.

gad;fs; :-

- ❖ Neha; vjph;g;G Kiwia gyg;gLj;Jjy;
- ❖ kUe;Jfspd; tpisTfisj; Fiwj;jy;
- ❖ Neha;j; njhw;W kw;Wk; mwpFwpfisf; Fiwj;jy;.
- ❖ jirfspd; Nrij;ij (Waste) jLj;jy;.
- ❖ czT%yk; Vw;gLk; njhw;wpidj; jLj;jy;.

fNyhhp :-

vr; . l . tp NehahspfSf;F rhjhuzkhdth;fis tpl mjpfkhd rj;J (energy)
Vwf;Fiwa (+500) 2900 Kcal/ ehs; xd;wpw;Fj; Njit.

khTr;rj;J :-

khTr;rj;J vd;gJ vspikahd rh;f;fiur; rj;J MFk;. mJ Ntiy nra;tjw;fhd
rf;jpia mspf;fpwJ nfhOg;G [Puzkhtjw;F cjTfpwJ.

ghpe;Jiuf;fg;gLk; fs;NghiwI;bNul;bd; msT 100 Kjy; 150 fpuhk; /
ehs;.

khTr;rj;J epiwe;j czTg;ngHUs;fshtd :-

NfhJik > fk;G > kf;fhr;Nrnsk; jpid tiffs;> fpoq;Ffs; jz;Lfs;> cUisf;
fpoq;F > kuts;spf;fpoq;F> rh;f;fiu ts;spf;fpoq;F kw;Wk; gPl;&l;.

Gujr;rj;J :-

Gujr;rj;J vd;git cly; cWg;Gfs; jirfs; ,tw;iw fl;Lgjjw;fhdrj;Jk; mwpaJk;
clYf;F vjph;g;Gr; rf;jpia mspg;gitAk; MFk;.

va;l;]pdhy; Vw;gLk; jir ,og;ig jLg;gJ Gujr;j;J MFk;. ghpe;Jiuf;fg;gLk; Gujr;rj;jpd; msT 12-20 fpuhk; / fp.fpuhk; / cly; vil. Gujr;rj;J mjpFKs;s czT tiffs; gUg;G tiffs; cOe;J > gl;lhzp > gr;irg;gaW > gPd;]; > NrhaH gPd;]; kw;wit ghy; > ,iwr;rp > Nfhopf;fwp Kl;il kw;Wk; kPd; Mfpatw;wpy; Gujr;rj;J mjpFKhf cs;sJ.

nfhOg;G :-

clk;gpy; rf;jpiar; Nrkpj;Jitg;gjw;fhd Kf;fpakhd %yfhuzk; nfhOg;Gr;rj;J MFk;. V>b>,>Nf Mfpa itl;lKpd;fis cl;fpufpg;gjw;F nfhOg;G kpfTk; mtrpakhdjhFk;. nfhKg;G mjpFKhf cs;s czTg;nghUl;fs; . nfhI;ilfs; Nth;f;fliy> Njq;fha;> ghjHk; gUg;G> Ke;jphpg;gUg;G> ntz;nza;> nea; Kl;il> Ml;Lf;fwp mNjhL fliy vz;nza;> Njq;nfz;nza; xU ehisf;F %d;W Njf;fuz;b gad;gLj;JtJ ey;yJ.

goq;fs; fha;fwpfs; :-

goq;fSk; fha;fwpfSk; mjpFKhd caph;r;rj;JfisAk; jhJ cg;Gf;fisAk; cilait> Mjyhy; va;l;]; NehahspfSf;F Neha; vjph;g;Gr; rf;jpf;F Njitahd Kf;fpakhd nray;fisir; nra;fpd;wd. ney;ypf;fha;> vYkpr;rk;gok; > nfha;ah> jpuhl;ir> khk;gok;> MuQ;R> jf;fhsp ,itfs; itl;lKpd; 'rp ' cilait Mjyhy; ,it ehH;r;rj;J cz;lhtjw;Fk; ,Uk;Gr;rj;ij cl;fpufpg;gjw;Fk; cjTfpd;wd. Mg;gps; > khJis mjpF ,Uk;Gr;rj;J cs;sit ,uj;jr; rptg;gZf;fs; cz;lhtjw;Fk; ,uj;j NrHifia jLg;gjw;Fk; cjTfpd;wd.

gyhg;gok; > gg;ghspg;gok; ,itfs; mjpFKhd fNuhl;bd; rj;Js;sitahjjhy; fz;ghh;itf;F mtrpakhditahFk;.

fha;fwpfs; :-

fha;fwpfs; jhJ cg;Gf;fs;> itl;lKpd;fs; ehH;g;nghUs;fs; mlq;fpaitahFk;. ghfw;fha; mjpF fNuhl;bd; rj;J cilaJ M];fhh;gpf; mkpyKk; cilaJ. KUq;iff;fPiu> griy kw;Wk; mfj;jpf;fPiufs; ,Uk;Gr;rj;J epiwe;jit. Kl;ilf;Nfh]; >fhypgpsth; nfHj;jky;yp>gr;ir ,iyfisAila fPiu> fj;jhpf;fha;> nts;shpf;fha;> KUq;iff;fha;>

ghfw;fha;> nts;isg;g+rzp> rptg;Gg;g+rzp Nghd;w fha;fwpfis czTld;
mjpfkhfr; Nrh;j;Jf; nfhs;s Ntz;Lk;.

ehh;r;rj;J :-

nrbfspy; cs;s gFjpahd ehh;r;rj;J ,J [Puzk; MfhJ.,uj;jj;jpYs;s
nfhy];l;uhy; msitt; fl;Lg;gLj;Jk;. <uj;ij cwpQ;Rk; kyr;rpf;fiy; jLf;f
cjTk;.czTf;fhd jhh;r;rj;J jpdhrp Njit 40 fpuhk; / ehs; mjpfkhd cs;s czT
tiffs;.NfhJik > jtpL > jhdpaq;fs;> Xl;];> fha;fwpfs; >gr;ir ,iyAs;s fha;fwpfs;
KUq;iff;fha; gPd;];> ntz;ilf;fha;> fhyp gpsth; kw;Wk; Kl;ilf;Nfh];.

caph;r;rj;Jfs; :-

caph;r;rj;Jf;fs; (Vitamins) kw;Wk; jhJ cg;Gfs;. caph;r;rj;Jf;fSk; jhJ
cg;Gf;fSk; Neha; vjph;g;Gr; rf;jpia gyg;gLj;j cjTfpd;wd.

capu;r;rj;J - V :-

capu;r;rj;J 'v' ey;y fz;ghh;itf;F mtrpakhdJ jpRf;fs; cw;gj;jpf;Fk;
mtrpakhdJ. itl;lcpd; 'v' mjpfKs;s czT tiffs; fhul; gr;irf; fha;fwpfs;
g+rzpf;fha; khk;gok; kPd; vz;nza; kw;Wk; fhl; ypth; Mapy; .

capu;r;rj;J 'gp₁' :-

euk;Gfis ey;y MNuhf;fpakhd epiyapy; itj;Jf; nfhs;tjw;F itl;lcpd; 'gp¹'
Njit. mjpfk; cs;s czTg;ngl;f;fs; NfhJik> jpiztiffs;> gl;lhzp kw;Wk; mhprp>
Kisf;fl;ba gaW tiffs;.

capu;r;rj;J 'gp₆' :-

euk;Gfis rhjhuzkhd epiyapy; itj;Jf;nfhs;tjw;F itl;lkpd; 'gp₆' mtrpakhdJ.
itl;lkpd; 'gp₆' mjpfk; cs;s czTg;nghUl;fs; jhdpaq;fs;> gl;lhzp gPd;]; nfhl;ilfs;
vz;nza; tpj;Jf;fs;> ,iwr;rp kPd;> Kl;il> ghy; Mfpait MFk;.

capu;r;rj;J - rp :-

va;l;]; NehahspfSf;F mj;jpahtrpakhd caph;r;rj;J itl;lkpd; 'rp' MFk;.
Vnddpy; ed;F njhpe;j [Puzp kw;Wk; Gz;iz Mw;Wfpd;w jd;ikAs;sJ. NkYk;
caph;r;rj;J 'rp' nry;fisj; J}a;ikahf;FfpwJ. ,it epiwe;j czTg;nghUl;fs;
vYkpr;ir> MuQ;Rgok;> md;dhrpg;gok;> kw;Wk; jf;fhsp MFk;.

capu;r;rj;J - b :-

Nehf;fk; :-

- ❖ ,it Rz;zhk;Gj;J kw;Wk; gh];gu]; Nghd;w jhJcg;Gf;fis cly; cwpQ;rpf;
nfhs;tjw;F gad;gLfpwJ.
- ❖ vYk;Gfspy; Rz;zhk;Gr;rj;J Nrfhpf;f cjTfpwJ.

md;whlk; cztpy; Nrh;j;Jf;nfhs;s Ntz;ba msT 10kp.fp caph;r;rj;J 'b'
epiwe;j czTg;nghUl;fs; vz;nza;> Kl;il> ntz;nza;> nea;> ghy; kw;Wk; ghy;
nghUl;fs;> #hpa xspahdJ caph;r;rj;J 'b' cUthjw;F cjTfpwJ.

jhJ cg;Gfs; :-

,Uk;Gr;rj;J :-

va;l;]; Nehaspfs; ngUk;ghYk; ,uj;j Nrhifapdh; ghjpf;fg;gLfpwhh;fs;.
,uj;jNrhifahdJ Nehahspfspd; jpwikiaAk; ngyj;ijAk; Fiwf;fpwJ. ,Uk;Gr;rj;J
,uj;jrptg;gZf;fs; cUthtjw;F gad;gfpwJ ,Uk;Gr;rj;J epiwe;j czTg;nghUl;fs; nty;yk;>
uhfp> KUq;iffPiu> Njd;> fy;yPuy;> kz;zPuy; kw;Wk; fPiutiffs;.

Rz;zhk;Gr;rj;J :-

Rz;zhk;Gr; rj;jhdJ vYk;Gfs; gyg;gLtjw;F Njitahd Kf;fpa jhJ cg;ghFk;. Rz;zhk;Gr;rj;J epiwe;j czTg;nghUl;fshdJ ghy;> japh;> ghyhil fl;b kw;Wk; cyh;e;j Njd;.

Jj;jehfk; :-

Jj;jehfk; vd;w jhJ cg;ghdJ vjpHrf;jp gyg;glTk; euk;G kz;lyj;jpd; nray;ghl;bYk; Kf;fpagq;F tfpf;fpwJ. md;whl cztpy; Nrj;j;Jf; nfhs;s Ntz;ba msT 11 kp.fp/ehs; ,it nfhl;ilfs; kw;Wk; jhdpaq;fspy; mjpfkf fhzg;gLfpwJ.

G+z;L kw;Wk; kQ;rs; Mfpait vjph;g;Grf;jpia Cf;Ftpf;fpwJ. md;whlk; 4 - 8 Ftis fha;r;rpa ePh; mUe;j Ntz;Lk;.

fl;Lg;gLj;j Ntz;ba czT tiffs; :-

- ❖ mjpg msT rh;f;fiu Kf;fpakhf Rj;jpfhpf;fg;gl;l rh;f;fiu mjpg msT cgNahf;Fk; nghOJ clypy; nfhOg;Gr;rj;jhf khWfpwJ. ,it ,Uja Neha;f;F toptFf;fpwJ.
- ❖ mjpg;gbahd nfhOg;G kw;Wk; vz;nza; clypy; nfhOg;Gr;rj;j mjpgfhp;fpwJ. ,it ,ja Neha;f;F toptFf;fpwJ.
- ❖ tbePh; Nghd;w ghdc;fs; mUe;Jtij Fiwf;f Ntz;Lk; Vnddpy; mit grpiaj;jLf;fpwJ.
- ❖ nghwpj;j tif czTfisj; jtph;f;fNtz;Lk;.

gpd;gw;w Ntz;ba Kiwfs; :-

- ❖ kpjkhd #l;by; czT kw;Wk; ghdc;fs; vLj;Jf;nfhs;s Ntz;Lk;.
- ❖ Fiwe;j msT czit ,ilntsptpl;L vLf;f Ntz;Lk;. 4 - 6 czT/ehs;
- ❖ jpz;gz;lq;fis Fiwj;Jf; nfhs;s Ntz;Lk;.
- ❖ vspjpy; nky;yf;\$ba kw;Wk; [Puzpf;f\$ba czTtiffis vLj;Jf; nfhs;s Ntz;Lk;.
- ❖ czTtiffis ifahs;tjw;F Kd;> rikg;gjw;Fk;. kw;Wk; cz;gjw;Fk; Kd;ghf iffis KOtJk; Rj;jkhf fOt Ntz;Lk;.
- ❖ rikg;gjw;F Kd; fha;fwpfis Rj;jkhf fOt Ntz;Lk; .

- ❖ czT jahhpg;gjw;F Rj;jkhd kw;Wk; ghJfhg;ghd jz;zPh; cgNahfpf;f Ntz;Lk;.
- ❖ fwp> Nfhop kw;Wk; kPd; ed;whf Ntfitt;f Ntz;Lk;.
- ❖ czT kw;Wk; Fbjz;zPh; G+r;rpfs; kw;Wk; vypfsplkpUe;J ghJfhj;J %b itf;f Ntz;Lk;.
- ❖ fha;fwp> khkprk; kw;Wk; kPd;fis ntl;Lk; nghOJ fhak; Vw;glhjthW ftzkhf ,Uj;jy; Ntz;Lk;.
- ❖ nfhjpf;f itj;J Mwitj;j ePiu mUe;j Ntz;Lk;.

jd; Rfhjhuk; :-

- ❖ fhiy vOe;j gpd;Gk;> cwq;Ftjw;F Kd;Gk; gy; Jyf;f Ntz;Lk;.
- ❖ nkd;ikahd gy;Jyf;fpia gad;gLj;j Ntz;Lk;.
- ❖ rhg;gpl;lgpd;G czTj;Jfs;fis ePf;ftjw;F thia ePhpdhy; ed;F myk;g Ntz;Lk;.
- ❖ cg;Gj;jz;zPhpdhy; thia nfhg;gspf;f Ntz;Lk;.
- ❖ \$l;lnehprYs;s ,lj;ij jtph;f;f Ntz;Lk;.
- ❖ Kfj;jpiu (m) iff;Fl;ilia ntspNa nry;Yk;NghJ cgNahfpf;f Ntz;Lk;.
- ❖ iffis ed;F fOt Ntz;Lk;.
- ❖ foptiwa cgNahfpj;jgpd;G
- ❖ Fg;igfis mfw;wpa gpd;G
- ❖ tPl;il Rj;jk; nra;j gpd;G
- ❖ khkprq;fisj; njhl;l gpd;G
- ❖ tPl;L tpyq;Ffis njhl;l gpd;G
- ❖ Njhl;lg;guhkhpg;Gf;F gpd;G
- ❖ efq;fis ntl;l Ntz;Lk;.
- ❖ \$h;ikahd nghUl;fis ifahSk;nghOJ ftdkhf ,Uf;f Ntz;Lk;.
- ❖ xU ehisf;F ,UKiw Ez;zpaphpf;nfhj;yp Nrhg;ig cgNahfpj;J Fspf;f Ntz;Lk;.
- ❖ tPhpak; Fiwe;j Nrhg;G cgNahf;fNtz;Lk;.
- ❖ ryitNrhg;G cgNahfpj;gij jtph;f;f Ntz;Lk;.
- ❖ Fspg;gjw;F RLjz;zPiu cgNahfpf;f Ntz;Lk;.

- ❖ Fspf;Fk;nghOJ Njhy; kbg;Gfs;> tpuy;re;JfSf;Fk; ,ilNa mjpg ftdk; nrYj;j Ntz;Lk;.
- ❖ Fspj;jgpd;Gk;> cwq;Ftjw;F Kd;Gk; G[k;> fhy;fis cyuhky; itf;f jputk; cgNahfpf;f Ntz;Lk;.
- ❖ thuj;jpw;F ,UKiw \hk;G cgNahfpj;J jiy Fspf;f Ntz;Lk;.
- ❖ Nrhg;G kw;Wk; Jz;L jdpahf cgNahfpf;f Ntz;Lk;.
- ❖ <ug;gjj;ij jLg;jjw;F jsh;e;j cilfis mzpa Ntz;Lk;.
- ❖ Jzpfis jdpahf cgNahfpf;f Ntz;Lk; . mtw;iw ryitf;fl;b nfhz;L Rj;jk; nra;a Ntz;Lk;.
- ❖ Jzpfis Ez;Zaph;f;nfhy;yp fiyrypy; eidj;J #hpa xspapy; cyh;j;j Ntz;Lk;.
- ❖ fiufis fpUkpehrpdp nfhz;L Rj;jk; nra;aNtz;Lk;.

clw;gapw;rp kw;Wk; cly; nray;ghL :-

va;l;]; NehAk;> clw;gapw;rpAk; xUtifapy; njhlh;G nfhz;LitfshFk; . Vnddpy; ,it vjph;g;Grf;jpia Cf;Ftpf;Fk; . NkYk; b - ypk;Nghirl;Lfspd; vz;zpf;ifia mjpgfhpf;fpwJ.

clw;gapw;rpapd; gad;fs; :-

- ❖ jirfspd; jplid mjpgfg;gLj;JfpwJ.
- ❖ kd mOj;jj;ij Fiwf;fpwJ.
- ❖ vjph;g;Grf;jpia Cf;Ftpf;fpwJ.
- ❖ J}f;fj;ij Kiwg;gLj;JfpwJ.
- ❖ Ra jd;ikia Nkk;gLj;JfpwJ.
- ❖ grpia mjpgfhpf;fpwJ.
- ❖ vYk;G gyj;ij \$l;LfpwJ.

clw;gapw;rpapd; tiffs; :-

gyj;ij Nkk;gLj;Jk; clw;gapw;rp :-

gyj;ij Nkk;gLj;Jk; clw;gapw;rpahdJ jirfsp;d;; jplid mjpgfhpf;fpwJ. gSJ}f;FtJ ,jpy; xU tifahFk;.

Rthrj;ij Nkk;gLj;Jk; clw;gapw;rp :-

Rthrj;ij Nkk;gLj;Jk; clw;gapw;rpahdJ ,jak; kw;Wk; EiuPuypd;
typikahd nray;ghl;bw;F> gpuzthAtpd; Njitia G+h;j;jp nra;aTk;
gad;gLfpwJ. NkYk; gpuzthAtpd; Row;r;rpF;Fk; cjTfpwJ.

cjhuzk; :-

Xl;l;gapw;rp> ePr;ry; gapw;rp> kpjptz;b gapw;rp> eilgapw;rp>
,wFg;ge;jhl;l;.

Rthrj;ij Nkk;gLj;Jk; clw;gapw;rpapd; gad;fs; :-

cly; eyk; :-

- ❖ fhw;W Row;rpia mjpfhpf;fpwJ.
- ❖ gpuzthA cl;fpufpg;ig mjpfhpf;fpwJ.
- ❖ ,uj;j mOj;jj;ijf; Fiwf;fpwJ.
- ❖ clypd; nfhOg;G tpfpj;ij Fiwf;fpwJ.

kdeyk; :-

- ❖ gjl;l;ij Fiwf;fpwJ
- ❖ Ra jd;ikia Nkk;gLj;JfpwJ.

,Utif clw;gapw;rpAk; fye;J nra;tJ rpwe;jjhFk;. eilgapw;rp vspikahdJ>
kpfTk; gaDilajdhFk;> Vnddpy; ,it Fiwe;j rf;jpNa nrythfpwJ.

rpY Fwpg;Gfs; :-

- ❖ clw;gapw;rpia nkJthfTk;> njhlh;r;rpahfTk;> jpUk;gj;jpUk;g
nra;a Ntz;Lk;.
- ❖ mjpfsT clw;gapw;rpapypUe;J vr;rhpf;if ,Uf;f Ntz;Lk;.
mwpFwpg; glgl;G> jiyRw;wy;> Fkl;ly;.
- ❖ Muk;gepiy clw;gapw;rpapid Kiwahd clw;gapw;rpF;FKd;
Nkw;nfh;s Ntz;Lk;.

Xa;T kw;Wk; cwf;fk; :-

cwf;fk; kw;Wk; Xa;T va;l;]; Nehahspfspd; cly; eyj;ij Nkk;gLj;Jtjpy;
Kf;fpa gq;F tfpf;fpwJ. J}f;fkpd;ikapdhy; cly; Nrhh;tilfpwJ.

gad;fs; :-

- ❖ kd mOj;jj;ijf; Fiwf;fpwJ
- ❖ kdi; ,yFthf;FfpwJ
- ❖ Gj;Jzh;r;rpia mjpfhpf;fpwJ
- ❖ Nrhh;it ePf;FfpwJ.

gpd;gw;w Ntz;ba Kiwfs; :-

- ❖ xt;nthU ehSk; xNu Neu;jjpy; cwq;fp vOe;jpUf;f Ntz;Lk;.
- ❖ miukzpNeu;jjpw;F gpd;Gk; cwf;fk; ,y;iynadpy; J}f;fk; tUk; tiu
VjhtJ nra;a Ntz;Lk;. cjhuzk; - Gj;jfk; gbj;jy;.
- ❖ cwq;Ftjw;F Kd;G mjp;f czT kw;Wk; ,dpg;G ghdq;fisj; jtph;f;f
Ntz;Lk;.
- ❖ xU ehisf;F Fiwe;jJ 8 kzpNeuk; cwq;f Ntz;Lk;.
- ❖ Kiwahd nray;ghl;Lld; Xa;T vLf;f Ntz;Lk;.
- ❖ cwq;Ftjw;F Kd; 1 Ftis ghy; mUe;j Ntz;Lk;.

khj;jpiufs; :-

- ❖ Jiz Cl;r;rj;jhfTk;> ituir mopf;Fk; (Mz;bnul;Nuh itu];) gad;gLfpwJ.

Nehf;fk; :-

- ❖ itu];fspd; vz;zpf;ifia Fiwf;fpwJ.
- ❖ gpd;tpisTfisj; jLf;fpwJ.
- ❖ re;jh;g;gepiy njhw;W Nehapid jLg;gpw;Fk;> rpfpr;irf;Fk; cjTfpwJ.

Kd;ndr;rhpf;if :-

- ❖ vj;jif kUe;Jfs; vLf;f Ntz;Lk;> vjw;fhf vLf;f Ntz;Lk;? vd;gitfspy; ftdkhf ,Uf;f Ntz;Lk;.
- ❖ ghpe;Jiuf;fg;gl;l msit khw;whky; cl;nfhs;s Ntz;Lk;.
- ❖ khj;jpiufs; jtwkhky; vLf;f Ntz;Lk;.
- ❖ GJ khj;jpiufs; kUj;Jthpd; ghpe;Jiuapy;yhky; vLf;f \$lhJ.

nghJthd jLg;G Kiwfs; :-

- ❖ J}a;ikapy;yhj czTg; gjhh;j;jq;fs; jtph;f;f Ntz;Lk;.
- ❖ cly; vilia Fwpg;gpl;l ,ilntspapy; ghpNrhjpf;f Ntz;Lk;.
- ❖ jiuia Ez;Zaphpf;fiuriyf; nfhz;L thuj;jpw;F ,UKiw Rj;jk; nra;a Ntz;Lk;.
- ❖ the;jp kw;Wk; cly; jputq;fshy; fiugbe;j jiuia fpUkp ehrpapdhy; Rj;jk; nra;a Ntz;Lk;.
- ❖ tPl;Lr;Rw;Wg;Gwj;ij J}a;ikahf itf;f Ntz;Lk;.
- ❖ foptiwa Rj;jkhfTk;> %bAk; itf;f Ntz;Lk;.
- ❖ the;jp kw;Wk; tapw;Wg;Nghf;fpd; NghJ cg;Gr;rh;f;fiu fiury; mUe;j Ntz;Lk;.

njhlh; eltbf;iffs; :-

- ❖ ftdpg;G kw;Wk; cWJiz Nkw;nfhs;tjw;fhf gad;gLfpwJ.
- ❖ eyf;fhuzpfis fz;fhdp;gjw;fhf gad;gLj;JfpwJ.
- ❖ MNyhridf;F gad;gLfpwJ.
- ❖ gpd;tpisTfis fz;Lnfh;s;tjw;F gad;gLfpwJ.
- ❖ ,uj;j nts;is mZf;fspd; vz;zpf;if (rPNuhyh[pf;fy;) mwpe;Jnfhs;tjw;F %d;W khj;jpw;F xU Kiw ghpNrhjid nra;a Ntz;Lk;.

KbTiu :-

,e;j mwpTiufis va;l;]; Nehahspfis re;jh;g;gepiy njhw;WNeHa;fspypUe;J jLg;gjw;Fk;> tho;f;ifj; juj;ij cah;j;Jtjw;Fk; gad;gLfpwJ.

SECTION -A
DEMOGRAPHIC VARIABLES

SAMPLE NO.:

1. AGE :

- a. 20 – 30 years
- b. 31 – 40 years
- c. 41 – 50 years

2. SEX

- a. Male
- b. Female

3. MARITAL STATUS

- a. Married
- b. Unmarried
- c widow/ widower
- d Divorce

4. EDUCATIONAL STATUS

- a. No formal education
- b. Primary school
- c. High School
- d. Higher secondary school
- . e. Graduate

5. OCCUPATION

- a. Coolli worker
- b. Un employed
- c. Self employed
- d.Private employed
- e Government employee

6. AREA OF RESIDENCE

- a. Rural
- b. Urban

7. DURATION OF ILLNESS

- a. Newly diagnosed
- b. < 5 Years
- c. > 5 Years
- d) More than 10 Years

SECTION –B
STRUCTURED INTERVIEW SCHEDULE
KNOWLEDGE QUESTIONNAIRE REGARDING PREVENTION
OF OPPORTUNISTIC INFECTIONS

Please read the following questions carefully and select the answer and placing a tick mark (✓) in appropriate space provided on the right side of each questions.

1. What kind of disease is human immuno deficiency virus infection?
 - a) sexually transmitted diseases
 - b) Hereditary disease
 - c) Auto immune diseases
 - d) Communicable disease
2. Which of the following way HIV is not transmitted?
 - a) Sexual contact with HIV infected person
 - b) From HIV infected mother to baby
 - c) Through HIV infected blood
 - d) By touching, HIVinfected person
3. Which is the confirmatory test for HIV infection?
 - a) Blood test
 - b) Urine test
 - c) X- ray
 - d) Scanning

4. How opportunistic infections develop in a HIV patients?
 - a) Due to immune suppression
 - b) Due to decreased body mass
 - c) Due to physical stress
 - d) Due to poor digestion
5. What kind of drinks should be strictly avoided?
 - a) Fruit juices and soft drinks.
 - b) Milk and tea.
 - c) Coffee and alcohol
 - d) Milk and coffee
6. Which one of the following is not true regarding balanced diet?
 - a) Strengthens the immune system
 - b) Reduces the symptoms of opportunistic infection
 - c) Reduces the side effects of drugs.
 - d) Reduces the immune response
7. What kind of food is best for HIV patient ?
 - a) Easily digestable foods
 - b) High fatty diet
 - c) Spicy food
 - d) Liquid food
8. Which type of nutrient component to be taken by HIV patient?
 - a) High calorie and High protein
 - b) High calorie , low protein
 - c) Low calorie, High protein
 - d) Low calorie , low protein
9. What sort of food item is best to boost the immune system?
 - a) Adding garlic in food preparation
 - b) Adding ghee in food preparation
 - c) Adding Ajinomoto in the food preparation
 - d) Adding spices in the food preparation

- 10) Which water is safe to drink?
- a) Boiled and cooled water
 - b) Water kept in mud pot
 - c) Refrigerated water
 - d) Carbonated water
11. What you will do to clean the floor if contaminated with vomitus?
- a) Wash the area with running water
 - b) Wash with antiseptic solution
 - c) Clean with bleaching powder mixed water
 - d) Wipe with waste cloth
12. Which one of the following measures will not prevent opportunistic infection?
- (a) Food hygiene
 - (b) Personal hygiene
 - (c) Environmental hygiene.
 - (d) Reduced rest and sleep.
- 13) What should be used to brush the teeth?
- a) Using soft brush
 - b) Use ash powder
 - c) Use fingers
 - d) use neem sticks
- 14) What will you do to avoid respiratory infections?
- a) Wearing protective goggles
 - b) Wear mask while going out
 - c) Use vehicle while going out
 - d) Wearing gloves

15. What precaution HIV patient should take while shaving?
- a) Use sharp razor
 - b) Avoid cuts during shaving
 - c) Using saloon
 - d) Avoid using electric razor
16. What is the main benefit of exercise on immune system?
- a) Boost the immune system
 - b) Reduce the muscle mass
 - c) Decrease oxygenation to the cells.
 - d) Increases stress
17. Which one of the following is aerobic exercise?
- a) Brisk walking,
 - b) Weight lifting
 - c) High jump
 - d) Indoor games.
18. Which one of the following required to strengthen the muscles and bone?
- a) Calcium
 - b) Fatty foods
 - c) Iron
 - d) Carbohydrates
19. How much time sleep is needed per day?
- a) 6 hours
 - b) 8 hours
 - c) 10 hours
 - d) 12 hours

20. What measures should not be taken to improve better sleep?
- a) Go to the bed at same time and get up the same time
 - b) Doing regular exercise
 - c) Avoiding heavy meals
 - d) Taking Sleeping tablets
- 21) Which one of the following is not true regarding rest and sleep?
- a) Reduces stress
 - b) Relaxation of mind
 - c) Increases concentration
 - d) Promote mental irritations
- 22) Which one of the following statement is true regarding medication?
- a) Take full dose as prescribed
 - b) Omit the dose if drug is not available .
 - c) Take in an empty stomach .
 - d) Take till the symptoms are relieved.
23. What is the goal of drug therapy in HIV?
- a) Prevent the occurrence of opportunistic diseases
 - b) Eradicate the disease
 - c) For rehabilitation
 - d) Reduce discomfort
24. How often the serological examination to be done?
- a) once in 3 month
 - b) once in 6 months
 - c) once in a month
 - d) Whenever symptoms appearance

25. What is the purpose of doing serological examination in follow up?
- a) To know the number of red blood cells
 - b) To prevent the complication
 - c) To treat skin lesions
 - d) To know the number of white blood cells

SECTION –C

STRUCTURED INTERVIEW SCHEDULE

PRACTICE REGARDING PREVENTION OF OPPORTUNISTIC INFECTIONS

Please read the following questions carefully and select the answer and placing a tick mark(✓) in appropriate space provided on the right side of each questions.

S.NO	CONTENT	YES	NO
1	Are you taking high protein diet?		
2	Do you avoid fried foods ?		
3	Do you add more fibers in your diet ?		
4	Do you wash your hands with soap and water after defecation ?		
5	Are you washing the fruits thoroughly before eating?		
6	Do you drink boiled and cooled water?		
7	Do you bathe daily ?		
8	Do you use separate soap and towel?		
9	Do you rinse the mouth after each meal?		
10	Do you avoid crowdy area?		
11	Are you wearing mask while going out?		
12	Are you doing exercise daily?		
13.	Do you sleep 8 hours at night?		
14	Are you taking rest in between the activities?		
15.	Are you taking heavy meal at bed time?		

gFjp - m
RaFwpg;Gfs;

thpir vz;:

1. taJ:

m) 20-30 tUlq;fs;

M) 31-40 tUlq;fs;

,) 41-50 tUlq;fs;

☐
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☐

2. ghypdk;:

m) Mz;

M) ngz;

☐
☐

3. jpUkz epiy:

m) jpUkzkhdth;.

M) jpUkzkhfhjth;.

,) tpjit/ kidtpia ,oe;jth;.

<) tpthfuj;jhdth;.

☐
☐
☐
☐

4. fy;tpj; jFjp :

m) fy;tpawptpy;yhjth;

M) Muk;gf;fy;tp

,) cah;epiyf;;fy;tp

<) Nky;epiyf;fy;tp

c) gl;ljhhp

☐
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☐
☐
☐

5. njhopy;:

m) \$yp Ntiy

M) Ntiyapy;yhjth;

,) Ra njhopy;

<) jdpahh; Jiw

c) muRj;Jiw

☐
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☐
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6. ,Ug;gplk;:

☐

m) fpuhkk;

☐

M) efuk;

7. Neha; tha;g;gl;l fhyk;:

☐

m) Muk;g epiy

M) 5 Mz;Lf;F fPo;

☐

,) 5 Mz;Lf;F Nky;

☐

<) 10 Mz;Lf;F Nky;

☐

gFjp - M

mwpTj;jpwd; Nfs;tpfs;

1. vr;.l.tp vd;gJ vj;jifa NehahFk;?
m) ghy;tpid Neha;
M) guk;giu Neha;
,) Ra vjp;g;G Neha;
<) njhw;WNeHa;
☐
2. vr;.l.tp. NehahdJ gpd;tUk; vt;topapy; guthJ?
m) vr;.l.tpahy; ghjpf;fg;gl;ltUld; clYwT nfhs;Sjy;
M) vr;.l.tpahy; ghjpf;fg;gl;l jhaplkpUe;J Foe;ijf;F guTjy;
,) ,uj;jjhdk; nra;tjd; %yk;
<) vr;.l.tpahy; ghjpf;fg;gl;ltiuj; njhLtjd; %yk;
☐
3. vr;.l.tp Neha;f;fpUkpia fz;lwpA cjTk; Kiwahd ghpNrhjid ahJ?
m) ,uj;jg;ghpNrhjid
M) rpWePh; ghpNrhjid
,) vf;]-;Nu
<)];Nfd;
☐
4. re;jh;g;g epiy njhw;WNeHa; vt;thW jhf;fg;gLfpwJ?
m) vjph;g;Gjd;ik Fiwtjhy;
M) cly; gUkd; Fiwtjhy;
,) mjPj cly; Nrhh;tpdhy;
<) [Puz Kiwapd;ikapdhy;
☐
5. vt;tifahd ePh;ghdj;ij fl;lhakhf jtph;f;f Ntz;Lk;?
m) gor;rhW kw;Wk; nkd;ghdq;fs;
M) ghy; kw;Wk; B
,) NjePh; kw;Wk; kJ
<) ghy; kw;Wk; NjePh;
☐
6. gpd;tUtdtw;Ws; rhptfpj czitg;gw;wpa jtwhd \$w;W ahJ?
m) vjph;g;Grf;jpia gyg;gLj;Jk;
M) re;jh;g;gepiy njhw;WNeHapd; mwpFwpiaf; Fiwf;Fk;
,) kUe;Jfspd; ghjpg;igf; Fiwf;Fk;
☐

- <) vjph;g;Grf;jpia Fiwf;Fk; ☐
7. vr;.l.tpahy; ghjpf;fg;gl;ltUf;F vj;jifa czT rpwe;jJ?
 m) vspjpy; [Puzkhff;\$ba czTfs;
 M) nghhpj;j czTfs;
 ,) fhuk; epiwe;j czTfs;
 <) gjg;gLj;jg;gl;l czTfs; ☐
8. vr;.l.tpahy; ghjpf;fg;gl;lth;fs; vj;jifa Cl;lr;rj;Jf;fs; epiwe;j czit cl;nfhs;s Ntz;Lk;?
 m) mjpgf rf;jpj;juf;\$ba kw;Wk; Gujr;rj;Jf;fs; epiwe;j czTfs;
 M) mjpgf rf;jpjuf;\$ba kw;Wk; Gujr;rj;J Fiwe;j czTfs;
 ,) Fiwe;j rf;jpjuf;\$ba kw;Wk; Gujr;rj;Jf;fs; epiwe;j czTfs;
 <) Fiwe;j rf;jpjuf;\$ba kw;Wk; Fiwe;j Gujrr;rj;Js;s czTfs; ☐
9. vjph;g;G rf;jpia Cf;Ftpg;gjw;F cztpy; Nrh;j;J nfhs;s Ntz;ba nghUs; ahJ?
 m) Gz;L
 M) nea;
 ,) ngUq;fhaj;Jhs;;
 <) fhuk; ☐
10. vj;jifa FbePh; ghJfhg;ghdJ
 m) nfhjpf;fitf;fg;gl;L Mwitj;j ePh;
 M) ghidapy; Nrfhpj;Jitf;fg;gl;l ePh;
 ,) Fsph;rhjdg; ngl;bapDs;s ePh;
 <) Nrhlh ePh; ☐
11. the;jpapdhy; fiugbe;j ,lj;ij vt;thW Rj;jk; nra;a Ntz;Lk;? m)
 fiugbe;j ,lj;ij jz;zPhpdhy; Rj;jk; nra;a Ntz;Lk;
 M) Ez;Zaph;f;nfhy;yp fiuriuf; nfhz;L Rj;jk; nra;a Ntz;Lk;
 ,) fpUkpehrdpd fiuryhy; Rj;jk; nra;a Ntz;Lk;
 <) fe;ij Jzpapdhy; Jilj;J vLf;f Ntz;Lk;. ☐

12. gpd;tUk; ve;j Kiwapdhy; re;jh;g;gepiyj; njhw;WNEhapid jLf;f ,ayhJ?
 m) RfhjhukhdczT
 M) jd; Rfhjhuk;
 ,) Rw;Wg;Gw Rfhjhuk;
 <) Fiwe;j Xa;T kw;Wk; cwf;fk;
13. gy; Jyf;Ftjw;F vijg;gad;gLj;JtPh;fs;?
 m) nkd;ikahd gy;Jyf;fp
 M) rhk;gy;
 ,) tpuy;
 <) Ntg;gq;Fr;rp
14. Rthr njhw;W Nehapidj; jLg;gjw;F vd;d nra;tPh;fs;?
 m) ghJfhg;G fz;fz;zhb mzptjd; %yk;
 M) Kfj;jpiu mzpe;J nfhs;Stjd;%yk;
 ,) ntspr;#oYf;F nry;Yk; nghOJ thfdj;ij cgNahfpg;gjd;%yk;
 <) ifAiw mzpe;J nfhs;Stjd; %yk;
15. rtuk; nra;Ak; nghOJ vij ftdj;jpy; nfhs;s Ntz;Lk;?
 m) \$h;ikahd fj;jp cgNahfpf;f Ntz;Lk;
 M) rtuk; nra;Ak; nghOJ fhak; Vw;glhjthW ftdkhf ,Uf;f Ntz;Lk;
 ,) rY}Df;F nrd;W rtuk; nra;a Ntz;Lk;.
 <) kpd; rtuf; fj;jp cgNahfpf;f \$lhJ.
16. clw;gapw;rpapdhy; Vw;gLk; Kf;fpa ed;ik ahJ?
 m) vjph;g;G rf;jpia Cf;Ftpf;fpwJ.
 M) cly; jirapd; jplidf; Fiwf;fpwJ.
 ,) gpuhzthA nry;fSf;F nry;ytplhky; jLf;fpwJ.
 <) kd mOj;jj;ij mjpfg;gLj;JfpwJ.
17. gpd;tUtdtw;;Ws; Rthrij;Nkk;gLj;Jk; clw;gapw;rpfs; ahit?
 m) RWRWg;ghd eilgapw;rp.
 M) gSJ}f;Fk; gapw;rp.
 ,) cau Fjpf;Fk; gapw;rp.
 <) tPl;bDs; tpisahLk; tpisahL;L.



18. gpd;tUtdtw;Ws; vit jirfSf;Fk;> vYk;gpw;Fk; tYitf;
nfhLf;fpwJ?
m) Rz;zhk;G rj;J
M) nfhOg;Gr; rj;J
,) ,Uk;Gr;rj;J
<) khTr;rj;J ☐
19. xU ehisf;F vj;jid kzpNeu cwf;fk; mtrpakhdJ?
m) 6 kzpNeuk;
M) 8 kzpNeuk;
,) 10 kzpNeuk;
<) 12 kzpNeuk; ☐
20. cwf;fj;jpid Nkk;gLj;j vj;jifa Kaw;rpfs; Nkw;nfhs;s \$lhJ?
m) Kiwahd Neu;j;jpw;F gLf;iff;F nrd;W cwq;fTk; kw;Wk; Kiwahd
Neu;j;jpw;F vOe;jpUg;gjd; %yKk;.
M) Kiwahd clw;gapw;rp %yk;
,) mjpgf czit jilnra;tjd; %yk;
<) cwf;fj;jpw;F khj;jpiu cl;nfhs;tjd; %yk; ☐
21. gpd;tUtdtw;Ws; Xa;T kw;Wk; cwf;fj;jpidg; gw;wpa jtwhd \$w;W
ahJ?
m) kd mOj;jj;ij Fiwf;fpwJ
M) kdij ,yFthf;fpwJ
,) ftdj;jd;ikia mjpgfhpf;fpwJ
<) vhpr;rY}l;LfpwJ ☐
22. gpd;tUtdtw;Ws; kUe;Jfisg;gw;wpa ve;j \$w;W rhpahdJ?
m) ghpe;Jiuf;fg;gl;l msit khw;whky; cl;nfhs;s Ntz;Lk;
M) khj;jpiufs; ,y;iyNay; epWj;jpf; nfhs;syhk;
,) rhg;gpLtw;F Kd;dNu vLj;Jf;nfhs;s Ntz;Lk;
<) jw;fhypfkhf mwpFwppfis epWj;Jtw;F kl;LNk gad;gLj;jyhk; ☐

23. vr;.l.tp Nehahy; ghjpf;fg;gl;ltUf;F khj;jpiufs; nfhLg;gjw;F
Kf;fpa Fwpf;Nfhs; ahJ?
m) re;jh;g;g epiy njhw;WNeapidj; jLf;fpwJ
M) Neapid Fzg;gLj;JfpwJ
,) vjph;g;G rf;jpia gyg;gLj;JfpwJ ☐
<) mnrsfhpaj;ijf; Fiwf;fpwJ
24. vj;jid ehl;fSf;F xUKiw ,uj;jg;ghpNrhjid nra;J nfhs;s Ntz;Lk;?
m) 3 khjq;fSf;F xUKiw
M) 6 khjq;fSf;F xUKiw
,) xt;nthU khjKk;
<) mwpFwpfs; kPz;Lk; Njhd;Wk; nghOJ ☐
25. ,uj;jg; ghpNrhjid nra;tjw;fhd Fwpf;Nfhs; ahJ?
m) ,uj;j rptg;gZf;fspd; vz;zpf;ifia mwpe;J nfhs;tjw;F
M) gpd; tpisTfisj; jLg;gjw;F
,) Njhy; Gz;fis Fzkhf;Ftjw;F
<) b- ypk;Nghirl;Lfspd; vz;zpf;ifia mwpe;J nfhs;tjw;F ☐

gFjp - ,
tiuaWf;fgl;l nray;jpwd; Neh;fhzy; ml;ltiz

t. vz;	Nfs;tpfs;	Mk;	,y;iy
1.	ePq;fs; Gujr;rj;J epiwe;j czit cz;ZtPh;fsh?		
2.	ePq;fs; nghwpj;j czit jtph;gPh;fsh?		
3.	ePq;fs; eh;h;r;rj;J epiwe;j czit cz;ZtPh;fsh?		
4.	kyk; fopj;j gpd;G Nrhg;G cgNahfpj;J if fOTtPh;fsh?		
5.	goq;fis rhg;gpLk; Kd; fOTtPh;fsh?		
6.	ePq;fs; fha;r;rpa ePiu mUe;JtPh;fsh?		
7.	ePq;fs; jpdKk; Fspg;gPh;fsh?		
8.	ePq;fs; cq;fSf;nfd;W jdpahf Nrhg;G kw;Wk; Jzpfis gad;gLj;Jgtuh?		
9.	ePq;fs; rhg;gpl;lgpd; tha; myk;GtPh;fsh?		
10.	ePq;fs; \$l;l nehpryhd ,lj;ij jtph;gPh;fsh?		
11.	ePq;fs; ntspf;#oYf;F nry;Yk; nghOJ Kfj;jpiu mzpgtuh?		
12.	ePq;fs; jpdKk; clw;gapw;rp nra;gtuh?		
13.	ePq;fs; xUehisf;F 8 kzpNeuk; cwq;Fgtuh?		
14.	ePq;fs; NtiyfSf;F ,ilNa Xa;T vLj;Jf; nfhs;tPh;fsh?		
15.	ePq;fs; gLf;iff;F nry;Yk;Kd; mjpgf czT cz;Zk; gof;fk; cs;stuh?		

Answer Key

STRUCTURED INTERVIEW KNOWLEDGE QUESTIONNAIRE

SNO	1	2	3	4
1	1	0	0	0
2	0	0	0	1
3	1	0	0	0
4	1	0	0	0
5	0	0	1	0
6	0	0	0	1
7	1	0	0	0
8	1	0	0	0
9	1	0	0	0
10	1	0	0	0
11	0	0	1	0
12	0	0	1	0
13	1	0	0	0
14	0	1	0	0
15	0	1	0	0
16	1	0	0	0
17	1	0	0	0
18	1	0	0	0
19	0	1	0	0
20	0	0	0	1
21	0	0	0	1
22	1	0	0	0
23	1	0	0	0
24	0	1	0	0
25	0	0	0	1

**PRACTICE ASSESSING STRUCTURED INTERVIEW
QUESTIONNAIRE**

SNO	Yes	No
1	1	0
2	1	0
3	1	0
4	1	0
5	1	0
6	1	0
7	1	0
8	1	0
9	1	0
10	1	0
11	1	0
12	1	0
13	1	0
14	1	0
15	0	1